How Design leads work to strengthen the role of Design in IT-projects

A qualitative study on Design leads in the Norwegian IT-industry

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Abstract

This thesis examines Design leads in the Norwegian IT-industry, and how they work to strengthen the role of Design in their company or organization. Through 11 interviews across various IT-organizations in Oslo, Norway, the study identifies three key strategies employed by Design leads to enhance design maturity and strengthen the position of design in their company or organization: 1) Demystifying Design; 2) Arguing for the Value of Design through proof of value and advocacy on behalf of the designers; and 3) Organizing and Developing a Design Milieu. By connecting academic and practitioners' literature to the findings, this research contributes to the understanding of Design leads' role in improving design conditions, highlights the continued relevance of the problem, and suggests how a concept from practitioners' literature, DesignOps, can be a relevant frame through which further studies from this thesis can be made. Additionally, the identified strategies offer practical insights for addressing design challenges in the industry and supplementing the concept of DesignOps.

Keywords: Design lead, design practices, implementation of design in IT, strengthening the role of Design

Acknowledgements

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1. Introduction

Over the last few decades, design and designers have increasingly become an integral part of the IT-industry. Designers are also gradually getting more and more specialized professional titles, suggesting the field is, on the surface, becoming more established. The integration of designers into IT-departments, and thus IT-projects, has presented different challenges, including sub-optimal conditions for design processes, lack of time and resources for the tasks and processes to be done, and the somewhat low valuation of the design discipline as able to adequately address issues of usability (Begnum et al., 2019; Bygstad et al., 2008; Inal et al., 2020; Knight et al., 2020; Larusdottir et al., 2017; Sørum & Pettersen, 2016; Wale-Kolade & Nielsen, 2016).

The importance of design in software development is nothing new, and concepts such as usability have been written into the standards of the International Standardization Organization (ISO) by the 9241-11 standard in 1998 and updated again a decade later in 2010 by the 9241-210 (Bygstad et al., 2008; Gulliksen et al., 2006; Inal et al., 2020). While the significance of usability as a success factor for software products is widely acknowledged, there seems to be a lack of responsibility for the integration of processes to ensure this on both project and company and organizational level of those developing software (Boivie et al., 2003; Gulliksen et al., 2004, 2006; Svanæs & Gulliksen, 2008). Research studying usability professionals and the practice of user centered design present different obstacles hindering the integration of design practices in IT-projects. It is reported on how, despite the intentions of integrating design, designers have faced and still face, hurdles in their work (Boivie et al., 2003, 2006; Gulliksen et al., 2003, 2004, 2006; Svanæs & Gulliksen, 2008).

Aspects of design practice, such as ideal processes and design approaches, activities, and results, have been described and anchored in the academic literature (Goodman et al., 2011; Gulliksen et al., 2003; Svanæs & Gulliksen, 2008). It is often focused on how design processes ideally should look and how design thinking can be used to enhance the problem-solving of the design process to projects. Meanwhile, various issues of doing 'design work' arise, as designers become an ever more present part of IT-projects (Boivie et al., 2006; Gulliksen et al., 2006; Inal et al., 2020; Siegel & Dray, 2003; Svanæs & Gulliksen, 2008). What is seldom described further are the concrete ways in which these hindrances are countered in practice (Goodman et al., 2011).

In this thesis, 'designers' are used as a catch-all name for all working with the ensuring usable (digital) products. It encompasses a range of positions dealing with different aspects of the design process and practice, such as interaction designer, usability professionals, UX-designer, to name a few which have been evolving the last decade at least (Begnum et al., 2019; Kraftfôr, 2022; Sørum & Pettersen, 2016). This development shows how design and designers are not a monolithic position within the IT-industry.

Previous research on design practices and their role in project teams has primarily focused on the experiences of designers in IT-projects, and while finding that support from management is important it is given less attention (Boivie et al., 2006; Gulliksen et al., 2004). This thesis sets out to understand the role of Design leads in the Norwegian IT-industry. Design leads for the purposes of this thesis, is defined as a person whose role mandates strengthening the role of Design in the company or organization, often also called the Head of Design. These Design leads are the link between the management and the designers in the company or organization, and thus represent a group often mentioned in the literature as part of the context and conditions when it comes to understanding the role of design in the IT-industry (Gulliksen et al., 2004; Knight et al., 2020). This thesis will bridge the gap between the academic literature and the practitioners' literature from the IT-industry, and makes use of the concept of DesignOps to add perspective to the work of the Design leads.

1.1 Research Question

This thesis will explore the role of the design leads in the Norwegian IT-industry and contribute to the body of knowledge on the implementation of design in IT, through the following research question:

How are Design leads working to strengthen the role of design in IT-projects?

The thesis will address the research question based on a qualitative study comprising 11 interviews with Design leads in the Norwegian IT sector. The interviewees represent a diverse range of organizations and their technology departments which include design. The empirical material includes design leads both from private and public organizations, recent and

established design milieus, and in-house design departments and consultancy companies. The span of the included companies and organizations are meant to provide insight into different organizational contexts and understandings and practices of working with and structuring design work on site. It is not the intention to strive for generalizability of results, rather, the goal is diverse sources of insight.

Responding to the research question, the thesis presents three strategies through which the design leads work in order to strengthen the position of design and enhance the level of design maturity in their company or organization. The three identified strategies for doing so are: 1) Demystifying Design; 2) Arguing for the value of Design, through proof of value and advocacy on behalf of the designers; and 3) Organizing and developing a Design Milieu.

This thesis makes three contributions to the literature. The first contribution is an extension to the literature, by examining the role of work of the Design leads, specifically in managing expectations and responsibilities of designers, and its relation to the three presented success factors. The second contribution is the showcasing of how the strategy of *Arguing for the value of Design* provides empirical examples of how the Design lead operates on multiple levels. The third contribution is the extension of the literature on the tension between designers in teams and the need of a design milieu. Here, my findings build further on this in showing how the Design leads actively work to counter the necessary "lonesomeness" of the designer by establishing and developing a local supportive design milieu.

1.2 Thesis Outline

Chapter 2: Related Literature

Chapter 2 presents the academic context with and into which the findings of this research project relate to. This chapter describes the challenges designers face in IT-projects and proposals for addressing these. The concepts of Design, Design Maturity, and DesignOps are presented in this chapter.

Chapter 3: Research Approach

Chapter 3 describes the process of this study; the project background, how data was collected and how said data was analyzed.

Chapter 4: Findings

Chapter 4 presents the findings from the empirical material collected, highlighting the three identified strategies employed by the interviewed design leads to address the aforementioned challenges. These three strategies are: 1) Demystifying Design; 2) Arguing for the value of Design, through proof of value and advocacy on behalf of the designers; and 3) Organizing and developing a Design Milieu. This chapter also includes findings on how design as a field is perceived and understood by the interviewees.

Chapter 5: Discussion

Chapter 5 presents points of discussion between the related literature and the findings of Chapter 4. Through this discussion, the contributions of this thesis and suggestions for future work will be presented.

Chapter 6: Conclusion

In the final chapter, a summary of the thesis is provided, in addition to the limitations of this study.

2. Related Literature

In this chapter, the related literature will be presented. The literary landscape is made up of primarily works from the academic field of Information Systems (IS) and Human-Computer Interaction (HCI). In addition, practitioners literature is included where it includes relevant industry concepts not found in academic literature.

The related academic literature presents how the field of design - the part of the discipline used in the IT industry concerned with especially usability and the design processes surrounding this goal have met, and still face, difficulties when being implemented into technology intensive projects.

2.1 Design in IT-Projects

Design as a concept is known and used in many different disciplines, and it is therefore important to define the scope and understanding of design in relation to the IT industry. In addition, design in the IT-industry is a concept both used on its own but also in relation to the concept of Design Thinking. Before diving into how Design and Design Thinking is brought into the crossroad of Design/IT and business, design as a field and concept will be presented.

2.1.1 Defining Design

To build a foundation for both the following presentation of related literature and analysis of the findings, design as a term and field needs to be defined. The term "design" is one used by many to describe a large range of fields and forms of doing design. It should be noted from the start, that the design this thesis refers to and is concerned with, is design made in the context of IT-projects and usability/user experience design (Begnum et al., 2019; Sørum & Pettersen, 2016).

As design spans over multiple disciplines, so will the definition. Definitions of what design is and how it is done, have mostly been concerned with the physical world and the creation of artifacts (Kimbell, 2009). One of the central ideas of what design is, is that of Herbert Simon: "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones" (Simon, 1988, p. 67). This idea is, in contrast to other definitions of design, not

concerned with objects per se, and further connects this action of designing to a set of rational procedures aimed to address a concrete problem; a process of problem solving (Kimbell, 2009). Existing situations as Simon includes in his definition and concrete problems might in design not be so concrete as one might think. Part of the design process and definition by some, is also to figure out *what* the problem is or if the established problem actually is the right problem to solve (Dorst, 2011). This asking of questions is, i.e., part of the definition of design by Norman (2013):

> "One of my rules in consulting is simple: never solve the problem I am asked to solve. Why such a counterintuitive rule? Because, invariably, the problem I am asked to solve is not the real, fundamental, root problem. It is usually a symptom." (Norman, 2013, p. 217).

This statement of Norman shows the core of design as an abductive process, where multiple elements in the process of designing can be unknown: the problem or solution given is not necessarily the most right.

Along with Design, many disciplines and professions focus on solving problems. According to Don Norman, the difference lies in whether the problem solvers question the problem to begin with: how do they know it is the right problem they solve? "Engineers and businesspeople are trained to solve problems. Designers are trained to discover the real problems." (Norman, 2013, p. 218). The original problem can be taken as a starting point and not a final solution. Getting to the root problem is an iterative and expansive process and is referred to as Design Thinking, a process that engineers and businesspeople can partake in (Norman, 2013).

Getting to the bottom of the problem and solving the "right" problem, is one of the driving forces in addition to the attention to the end users in many approaches, such as Human-Centered Design and User-Centered-(systems) Design (Boivie et al., 2006; Gulliksen et al., 2003; Norman, 2013).

2.1.2 Usability and Other Approaches to Design

In the beginning, few professionals in the IT-industry would have directly applicable knowledge of usability and design (Gulliksen et al., 2006). Part of the "introduction" and implementation of design principles and notions of usable systems and interfaces have been done through the concept of Usability (Gulliksen et al., 2006; Sørum & Pettersen, 2016). As usability became evermore used and integrated as an element in systems development, it has

since been defined and standardized in the understanding, into the standards of the International Standardization Organization (ISO) by the 9241-11 standard in 1998 and updated again a decade later in 2010 by the 9241-210 (Bygstad et al., 2008; Gulliksen et al., 2006; Inal et al., 2020). In the ISO-9241-210, usability is defined as "a person's perceptions and responses that result from the use or anticipated use of a product, system or service." (Inal et al., 2020). Besides usability, the literature includes a range of design approaches that is connected to the development of and use of technology, such as User Centered Design (Gulliksen et al., 2003), Design Thinking (Kimbell, 2009; Knight et al., 2020; Mosely et al., 2018), Participatory Design (Zahlsen et al., 2020), Interaction design (Begnum et al., 2019; Sørum & Pettersen, 2016), and User Experience design (UX) (Inal et al., 2020; Rajanen et al., 2017). Each of these approaches to design denotes different focal points of the design process and outcome.

2.1.3 Design Thinking as a Business Strategy

Design Thinking can be defined as a "... set of cognitive processes for identifying and addressing stakeholder needs and for problem solving"(Wrigley et al., 2020, p. 126). In the last couple of years, a rise of the use and implementation of Design Thinking as part of a strategy of the business has been seen in the literature (Kimbell, 2009; Knight et al., 2020; Volkova & Jākobsone, 2016; Wrigley et al., 2020). With the 'expansion' of fields and purposes by linking design to innovation and business, Design Thinking is being understood as a way into practises and methods of design for otherwise non-designers (Wrigley et al., 2020). It is however discussed to what extent "design" and "design thinking" is a fitting term for the practices of doing design - whether one is a designer or not (Kimbell, 2009).

This focus on Design Thinking, and thus on design methodology and concepts, has been seen where the field of design meets IT and IT-projects. In these projects, business considerations and strategies are one of the main motivations for implementing design in the hope that, by implementing Design Thinking, it will be a potential steppingstone for innovation and a business advantage (Aly & Sturm, 2019; Kimbell, 2009; Wrigley et al., 2020). When becoming a part of a business strategy, Design Thinking becomes a set of practices and methods, seen as on one hand having potential to ensure *business success* and on the other hand, if not implemented, having negative financial consequences or loss of business (Aly & Sturm, 2019). Likewise, implementing Design Thinking as part of a business strategy can also be done with the intention of using these practices towards generating *innovation*. Thus design and Design

Thinking become part of new business practices (Battistella et al., 2012; Knight et al., 2020; Mosely et al., 2018).

2.2 Challenges with Integrating Design into IT-Projects

IT-systems are being developed with the purpose of being used, often in complex contexts, and as such, it becomes the question of ensuring usability of said systems relevant to the ones who have to use it (Sørum & Pettersen, 2016).

The implementation of design into IT-projects has been studied through several case studies. Across these, different challenges appear. Challenges vary based on the contexts and focus of the case. In the following, three main categories found will be presented. These challenges are often regarding the cooperation and expectations between designers and non-designers and their understanding of each field (Gulliksen et al., 2003; Sørum & Pettersen, 2016), actually getting to perform design processes in parallel to and intertwined with software development processes (Larusdottir et al., 2017), and taking the responsibility of usability in IT-projects (Boivie et al., 2006). These challenges are amongst challenges still present in recent studies of the field (Inal et al., 2020).

In the following sections, some of the key challenges with integrating design into IT-projects will be presented.

2.2.1 Compatibility with Software Development Processes

Where theory meets practice there will often be incongruence between the two. Design processes in IT projects are set in a multi-disciplinary context where everybody has interests at stake and everybody needs to cooperate to deliver a finished product. Design processes, their activities, and goals connected to the approach are often *models based on ideal processes*, setting up what an optimal process of designing could look like (Goodman et al., 2011). In reality, it is often not practically possible to perform full design processes in IT projects, given the demand to work together with colleagues from other disciplines, time and resources, and other factors that might come in the way of designers aiming to perform design activities (Svanæs & Gulliksen, 2008).

The mismatch between the design processes and project plans centered on software development lies among *many factors* in the timeline and priority of activities. Software development process models are often presented following a timeline of when activities and parts should be done. These timelines can be sequential[1], iterative[2], or follow some form of agile approach for optimizing the process[3]. With the intention or obligation to include practices around ensuring usability, it is seen that design processes and models aiming for user involvement in order to make "the right thing" face practical difficulties when sought to integrate into projects led by software development processes(Gulliksen et al., 2003; Larusdottir et al., 2017; Preece et al., 2015). This can be seen in processes where adjustments in timing and resources are not necessarily taking activities to ensure usability into account (Larusdottir et al., 2017). Some adjustments of how to conduct the projects are to be expected in order to incorporate a User Centered Systems Design (UCSD) perspective in a meaningful way (Gulliksen et al., 2003).

This poses challenges regarding getting the space to act out design related activities. Some of the challenges being reported, include being ignored or overlooked where insights and design concerns challenges the development process (Boivie et al., 2006), not having adequate documentation or agreement on how to "check-mark" demands and putting uneven amount of importance to i.e., use cases (Boivie et al., 2006); not having enough information and insight in the (technical) domain (Inal et al., 2020); lack of adequate information regarding the users (Inal et al., 2020); and making room for the designer in the process and the decisions made throughout (Larusdottir et al., 2017). Making room for the designer is connected to how decisions are made internally in the project team. This can be a question of whether there are room in an agile structured process to give voice to the data and user insights to effectively 'veto' on decisions being made, even if it hinders some of the work i.e., developers are doing

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[1] An example of a 'traditional' sequential process model is the Waterfall Model. The Waterfall Model is a series of activities all dependent on the previous in order to process. In its essence, the development and progress of the project happen chronologically from the definition of demands and specifications framing the product to process into the different stages of development and unto the testing phase and the release of the final product.(Sommerville, 2016)

[2] The Rational Unified Process (RUP) model is too presented as a process model that might clash with design processes. This model calls for working iteratively during the project (Boivie et al., 2003).

[3] Agile process models aim to provide flexibility in projects and workflows, and can be set up after different models. One of the most known of such models is the Scrum framework. Projects set up by Scrum principles are sectioned into tasks in a backlog. From the backlog, each sprint (often 2-4 weeks) is planned and executed, followed on evaluations - or retrospectives - hereafter. The goal here is to create a flexible workflow, with room for changes in i.e., specifications and other changes can be handled during the project period itself (Larusdottir et al., 2017; Sommerville, 2016).

or the process weights progression over assessment of the actual solution of the proposed problem (Larusdottir et al., 2017).

Implementing and performing design processes into existing models and practices related to software development is thus presented in the literature as a source of various challenges.

2.2.2 Bridging the Knowledge Gap

Another set of challenges addresses a knowledge gap observed surrounding design as a discipline in the IT-industry (Boivie et al., 2006; Gulliksen et al., 2003; Sørum & Pettersen, 2016). The knowledge gap covers the differences in how design and designers are perceived by non-designers and how their understanding is observed as sometimes diverging from what design is and how designers work. An example of this is non-designers assuming that design and usability is about 'cake frosting' and not seeing how a focus on usability affects the end product (Boivie et al., 2003; Svanæs & Gulliksen, 2008).That is the practical side of the knowledge gap, one that affects how designers are integrated into project teams.

One of the challenges designers face in the industry, is the mismatch between the expectations of designers and what they can do and what they do in reality (Sørum & Pettersen, 2016). An example of this, is how the different design disciplines in job-advertisements or expectations from non-designers, become mixed together or the nuances are simply not included. This can result in an expectation that designers know all aspects of design (a jack-of-all-trades in regard to all aspects of design) and beyond design: "...one hand, the kinds of qualifications and skills interaction designers have; and, on the other, expectations among companies in their search for interaction designers." (Sørum & Pettersen, 2016, p. 1). Sørum & Pettersen (2016) suggest misunderstandings of design and how design can be integrated, can be explained by how (digital) design is a relatively new field, lacking a shared understanding of the discipline, within the field and outside of design (Sørum & Pettersen, 2016).

Connected to this, at times, confusion of the internal divisions in the discipline, and of how design and working with usability, is coupled with how design as a field is experiencing a 'skill inflation'. The understanding of what doing and working with design and how it involves a range of values, disciplines, educational background, and activities is shown in the expansion of role titles leading to further confusion (Begnum et al., 2019; Boivie et al., 2006; Sørum & Pettersen, 2016).

A knowledge gap also exists between academia and commercial designers - or designers in the industry (Goodman et al., 2011). The gap between these two entities is based on a mismatch between how design is theorized and models are made, and how designers often work under other circumstances or priorities (Goodman et al., 2011).

2.2.3 Taking Responsibility of Usability

Moving on along this line, the field of design - being often set in the context of working with usability as an end goal, it is evident that there lies a challenge in the negotiation of roles. Usability is simply not seen as a common responsibility across the lines of project teams (Boivie et al., 2003; Gulliksen et al., 2006; Larusdottir et al., 2017). As usability became evermore important - or at least it became important to work towards it - so grew the role to fill.

If usability is not assigned to a position and somebody having the ultimate responsibility for it, it risk becoming a one-off concern, not integrated fully into the lifecycle of the project (Boivie et al., 2006; Larusdottir et al., 2017). With this responsibility comes the tasks of assuring that decisions being made are in accordance with usability concerns along with being the link between the project and users and clients (Larusdottir et al., 2017). Within this work lies the need to also function as a translator between disciplines within the project - i.e., making sure that designers and developers are on the same page, adding to the not-strictly-design work tasks (Goodman et al., 2011). Alas, it is also evident from the literature that placing the responsibility on only one person in the project, can "allow" the others to forget these concerns and thus not include them after all due to attitude - and resulting in overall sidecar-ing of the problem of usability (Boivie et al., 2003; Gulliksen et al., 2003).

Late negotiation of roles (such as keeping up with usability concerns), contact and collaboration between designers and developers can then be highlighted as key factors to having usability problems arising, such as issues with usability going unfixed, further miscommunication between designers and developers, higher project-expenses, and reduced customer or user participation (Inal et al., 2020).

2.3. Proposals for Furthering Integration

Some leeway and adjustment of practices need to be present for a project to incorporate both the development site and the design practices that can be part of ensuring i.e., usability. This

feeling of mutuality in coordinating knowledge fields might not be reciprocated, as it is seen in the literature how this notion is expressed:

> "Since it has been virtually impossible to make these organizations abandon their development processes, we have had to try to fit user centered activities into their existing processes, or the processes they believed they were using." (Boivie et al., 2006, p. 603).

Thus, the goal might not be that everybody should abandon their preferred process model. Rather, a focus of mutual adjustments - from all sites - could be a feasible strategy.

In the literature there are a range of proposals of measures that can be taken to further this integration of design into projects. What is in common between the various proposals, is the focus on fostering interdisciplinary *understanding*, *communication*, and *coordination of activities* (Gulliksen et al., 2006).

There are proposals seeking to erase some of the misconceptions or misunderstandings about design, and to establish and use (local) usability guidelines to make design decisions and activities more transparent for non-designers. Having, and using, explicit and company-wide guidelines for ensuring usability of the products across disciplines, can help make the design process and the way designers work, more transparent for their colleagues and help adjust these activities to the development process in the project (Gulliksen et al., 2003).

To counter the aforementioned challenges, it is widely suggested to attach the responsibility of usability to a specific role (Boivie et al., 2003; Gulliksen et al., 2006; Svanæs & Gulliksen, 2008). By doing that, usability as a concern and goal should become an important area of responsibility that should not be overlooked. Making the work and decisions surrounding the usability of the final product should make room for design concerns and activities. In addition to attaching usability to a specific role, it is also proposed that design as a discipline and designers themselves should show more initiative to be included (Siegel & Dray, 2003), and begin to argue for the added value of ensuring good usability of the finished products and how it would go against good business if they would not make usable products (Aly & Sturm, 2019).

In general, strategies for the further integration of design in IT are centered around 1) creating a common understanding of the problem subject, and making all aware, if not, part of ensuring usability; 2) incorporating design activities early in the project; 3) making sure designers are, from both a manager perspective and designer perspective, involved throughout the project

lifecycle; and 4) the support of managers' attitudes of design and usability as this is crucial in regards to allocating time, space, and resources (Boivie et al., 2006).

Beyond proposals regarding creating interdisciplinary understanding, communication, and coordinating activities, it is suggested that it could be beneficial to look at the challenges and goals of implementing design in IT-projects, through the multiple levels of the project. One way suggested, is to analyze what factors are at play and causing challenges when investigating these the individual level - that of the qualities of the designer itself, the project level - how the project and project team is organized, and lastly how the organization and culture herein, plays a part (Boivie et al., 2003, 2006). In addition to a multi-level perspective, it is suggested to examine how a range of areas of measurements can affect the conditions of implementing design thinking in the organization, where the measurements are connected to: 1) Strategic vision, 2) Facilities, 3) Cultural capital, and 4) Directives (Wrigley et al., 2020, p. 134).

Svanæs & Gulliksen (2008) suggest to further examine the context in which design is done: "*The context of design includes, but is not limited to, the internal structure of the developer and the client organizations, contractual and tender issues, software engineering tools, and stakeholder agendas and relations.*" (Svanæs & Gulliksen, 2008, p. 353). The context of Design hereby sums up the external factors affecting the design process. Combined with the two aforementioned perspectives on external factors, this provides the argument that design and working with usability do not occur in a vacuum.

To sum up the proposals made, a focus is on working with and suggestions to change the conditions that affect the implementation of design, another on the collaboration across disciplines, how the responsibility of usability needs to be assigned, and how the context of design is ever present and a factor to assess.

These aforementioned points are in sum proposals on how to strengthen the role of design in IT-projects and cement their position herein. Conditions that sum up the proposals can be expressed in Gulliksen et al. (2006)'s following three factors; 1) getting into the team, 2) getting action space, and 3) creating leverage for usability within the project (Gulliksen et al., 2006, p. 570-1) as essential for establishing and strengthening the role of design.

2.4 Literature of the Practitioners

To provide a perspective on the work of the Design leads, a concept from the industry and practitioners' literature will be presented. The concept of DesignOps (Design Operations) is formed in and as a result of the industry and from there, further written about by professionals in practice-near publications (Battles et al., 2018; Malouf, 2020; Merholz & Skinner, 2016) and addressed through professional blogs on platforms like Medium.com (Forté, 2020; Inocencio, 2018).

2.4.1 DesignOps

In the following section, the concept of DesignOps - a branch of *Operations* - will be elaborated (Malouf, 2020). As the concept of DesignOps is mainly described outside of academia, in the form of more practical-oriented literature aimed towards professionals working in the field, this following section will present this literature.

Most of what is written about DesignOps, is done so through *reports* and books, published with practitioners in mind, addressing what characterizes operations for design (Battles et al., 2018; Malouf, 2020; Merholz & Skinner, 2016). Furthermore, DesignOps is also addressed in blog posts from professionals working in and with design, most of which is from an American context, e.g. (Forté, 2020).

DesignOps as a concept for digital products is not new, though most written material on the concept is dated from 2016 till now (Inocencio, 2018; Malouf, 2020). Nonetheless, DesignOps has become increasingly relevant as the design departments are growing, thus needing strategies and procedures to handle this increasing workload on and off designers (Kaplan, 2019; Malouf, 2020).

2.4.1.1 Design Operations

DesignOps or *Design Operations* is a concept describing the operations that in total help facilitate design work, efficient workflows, and upscaling design teams. A definition proposed by Kaplan (2019), associated with the Nielsen Norman Group, is: "*the orchestration and optimization of people, processes, and craft in order to amplify design's value and impact at scale*" (Kaplan, 2019). The term operations thus incorporate all people, activities, services and partners, and systems behind these elements, that help produce value to the company or

organization. Good operations will not only be part of the value creation, but rather amplify the value created (Malouf, 2020).

DesignOps as a concept thus encapsulates the operations that help facilitate and create value through design and design best practices in the larger scope of business and the strategies and processes found here (UXPin Inc., 2021). To understand DesignOps, three lenses become relevant: Workflow operations, business operations, and people operations (Malouf, 2020). These three perspectives are relevant to prioritize between at any given time.

Well run operations in regards to design, is crucial in order for the designers to be able to perform their job (Merholz & Skinner, 2016). Common hurdles that design operations aim to address, are; problems regarding coordinating internally especially related to process and management of tools; problems with collaborating with the other parts of the organization; often mis-casting of designers and their competencies for projects; and lack of actual measurements for performance for internal and external use (Merholz & Skinner, 2016). Therefore, it is reiterated in the literature that metrics need to be part of the optimizing processes of design work: "By thinking "Operations" you come up with tangible data, metrics, statistics that will end the debate around Design's value. People never question numbers." (Forté, 2020) in order to evaluate the performance of the design team.

Both (Malouf, 2020; Merholz & Skinner, 2016) point out the fact that, even though design as a discipline is seen as - and often is - a highly creative field, certain factors and aspects of working with other disciplines need to be handled in an effective manner, in order to be able to work with design through its processes and application of Design Thinking (Malouf, 2020; Merholz & Skinner, 2016).

2.4.1.2 The Nielsen Norman Group Framework

One of the key frameworks for working with DesignOps which provide concrete guidance to application, is created by the Nielsen Norman group (Forté, 2020; Kaplan, 2019; Malouf, 2020; UXPin Inc., 2021), which was developed as part of their DesignOps-course. The Nielsen-Norman Group has formulated three pillars of DesignOps-practices to assist as terminology and making practices more tangible for those to implement these practices and perhaps changes; *1) How we work together, 2) How we get work done, and 3) How our work creates impacts* (Kaplan, 2019). The first category refers to the design milieu overall; how the design team can be structured; what activities and elements could be relevant for creating a good and supporting environment for designers; and lastly how onboarding and initiations to the

environment can be done. The second category refers to getting work done in an efficient manner through standardization-processes of the design processes used, guidelines and consistent use of toolsets; harmonizing between teams with the use of i.e., design systems; and lastly, how tasks are prioritized. The last category is aimed outwards from the design milieu, focusing on how design work can create impact. This includes making sure to use good metrics for the design work, furthering education and creating resources both for internal and external use, and creating success stories (Kaplan, 2019; UXPin Inc., 2021).

2.4.1.3 DesignOps and DevOps

Like Development Operations (DevOps), Design Operations (DesignOps) is a way to refer to the operations around optimizing workflows and productions (Forté, 2020). Both concepts are addressing *Operations* in their respective disciplines; how the work in their disciplines can and ought to be performed. Where DevOps focuses on the more technical aspects of creating, scaling, and maintaining large information technology systems, DesignOps is especially concerned with optimizing the workflows, interpersonal work, and scaling of the design practices (UXPin Inc., 2021).

2.4.2 Design Maturity

DesignOps, the application of or aspiration to, are always set in an organizational context. Many factors affect the possibilities and results of working with the design department. One especially important factor is what has been coined the "Design Maturity" (Giri & Stolterman, 2022; Hambeukers, 2017).

One way to define Design Maturity, is as a multidimensional relation between Design and Business, where each provides and benefits from the mutual relationship:

> "The maturity of design is the level to which design is attuned to the values, operation and level of problems of the business world. And, on the other side, how open the business is to the way of working and thinking of design. Design can help solve problems and guide organizations through operational, tactical and strategic problems."
> (Hambeukers, 2017)

In this definition, Design Maturity refers to the degree to which design aligns with business values, operations, and problem-solving, as well as the organization's readiness to embrace design thinking and recognize its value as a discipline.

Design Maturity then often refers to the 'position' of Design as a field and designers in the business or organization. It is often visualized as a ladder or otherwise a figure presenting progression, with each step representing a role or position of design and many might have a model they refer to (Giri & Stolterman, 2022; Hambeukers, 2017).

In essence, a ladder of design maturity describes how much design (and design thinking as methodology) is influencing the business', structure, workflows, strategies, and goals. The steps are often ranging from the lowest integration of design to the highest. The lowest levels or steps are describing a scenario where there might or might not be a designer employed in the organization. If one is present; there might only be one - and that one is performing anything design related. Design as a field is at this stage regarded and referred to as "making something pretty", and thus being part of the process of the project before the end. The steps then progress to describe further how design becomes more and more integrated in the business or organization, to influencing the values and strategies for the organization. The imagined last step of the ladder - a fully design-mature organization - describes the design field, and those working in it, as part of the decisions being made - based on design processes of prototyping and iterating (Giri & Stolterman, 2022; Hambeukers, 2017).

Design Maturity (models) are then a visual representation of the level of integration of design in the company or organization and thus also the position of said discipline.

3. Research Approach

The empirical base of this study consists of 11 interviews with Design leads, conducted in the Autumn of 2022 and the data analysis is based on a thematic analysis procedure.

To present the process of gathering and analyzing the empirical data, I will first present the background and motivation of the study. Hereafter, I will present the process of data collection, the interviewees, and how the data collection proceeded. Finally, I present the data analysis procedure, in how it was done and how I now present three identified strategies of the Design leads interviewed.

3.1 Project Background

In the Spring of 2022, the focus of the project was to research what is and make up the role of Information Systems Designers. This theme emerged from the Information Systems Research group's DHIS2 design lab at the University of Oslo (University of Oslo, n.d.) with an open prompt for studying design roles in practice. During a summer internship at the company represented in interviews 1 and 2, the concept of DesignOps surfaced. The company where I interned was very influenced by this concept and had used the framework behind to expand and develop their own design team.

Coming from both a semester with a course about Computer Supported Cooperative Work (CSCW), and a job as a seminar leader with a focus on software development and society, the concept of DesignOps, which is related to Development Operations (DevOps) and focuses on design, became more intriguing. As a result, the project turned its focus from the designers themselves and what makes up information systems designers, to the Design leads and how they work to strengthen the position of design locally in the organization. The focus on Design leads was then initiated by exploring the concept of DesignOps and its design practices and boundaries. This shift also points into some of the practicalities of design work, that often is not studied in our field of work.

Previous research has primarily focused on studying the designers and how they and their design processes would unfold in the context of IT-projects (e.g. (Boivie et al., 2006)). In the related literature, the managers (Design leads) of designers are mentioned as important to get

support from to be able to practice the role of design in IT-projects but have not been the focus of the research (Gulliksen et al., 2004).

Combined with the spark of interest for the framework and practices of DesignOps, the empirical focus of this thesis was aimed at the ones holding these positions as Design leads. These are the ones that mediate between the corporate levels, while being in position to address the challenges the field meets and being able to affect the strategy to deal with these.

This study is empirically based on 11 semi-structured interviews with Design leads in the Norwegian IT-industry in Oslo. In addition to academic literature, this thesis draws on practitioners' literature for the concept of DesignOps.

The data collection was conducted in the Autumn of 2022.

3.2 Data Collection

The empirical base of the thesis consists of 11 semi-structured interviews. All interviews were conducted at the participants' place of work in Oslo.

The interviews took inspiration from the concept of DesignOps and how Design leads were working with this framework. The purpose of the interviews was to understand the organization and orchestration of design teams and design as a discipline, organizational context and conditions, and challenges faced in the building of the design team.

The interviewees are all relevant as they all hold experience with initiating, growing, and maintaining design as a discipline in their organization. All hold the position of Design leads in their respective organizations, with the exemption of Interviewee 11. The interviewees were sampled through a convenience sampling and some active outreach to design leads.

3.2.1 Participants

The participants (and their design teams) represent various degrees of 'development' or design maturity in regard to the design team. The interviewed companies and organizations make up

a sample consisting of design teams with various sizes, degrees of development of the design team (i.e., how established are they on site), stages of the design team; how old or new they are, and roles of design in the corporate strategy are present. In addition, the sample contains both private companies and public organizations as well as design teams with inhouse designers and consultant-designers are represented. The goal of the sample has not been to claim findings to be generalizable, such as a larger and rigorous survey could. Instead, the goal has been to gain insight into different configurations and contexts of design teams in order for the findings to reflect design across the specter of the Norwegian IT-industry.

The following table provides an overview of the interviews conducted.

Participant	Position / Role	Type of organization
Participant 1	Design lead, with main responsibility for the Design discipline	Large company. Not a traditional IT-organization, but ever evolving IT-department (same organization as Participant 2)
Participant 2	Head of Design	Large company. Not a traditional IT-organization, but ever evolving IT-department (same organization as Participant 1)
Participant 3	Head of Design	Large company. Not a traditional IT-organization, but ever evolving IT-department
Participant 4	Founder and designer with personnel responsibility	Small design consultancy company
Participant 5	Head of Design	The IT-department of a central public institution
Participant 6	Head of UX-group	The IT-department of a large Norwegian university
Participant 7	Creative Lead	Large consultancy company. Not only specialized in design
Participant 8	Senior Manager	Large consultancy company. Not specialized in

	(Design)	design. "Design" here is a recent addition.
Participant 9	Head of Design	Large Norwegian (and now cross-national) platform. Frontrunners in UX in IT.
Participant 10	Design Manager	The IT-department of a central public institution (same as Participant 11)
Participant 11	Designer, with special role in internal strategy meetings	The IT-department of a central public institution (same as Participant 10)

Table 1: Complete list of participants

3.2.2 Recruitment

Participants were recruited mostly through my network as recommendations, and through active outreach by email. The recruiting was based on my own and fellow students' summer internships in companies and organizations having a sizable technology department which features a design team on site, and the contacts made here. These connections were crucial for the response rate; e-mails that were sent without a connection in common to the given respondent went primarily cold without a reply, whereas e-mails with a referral were almost all answered and with a positive outcome. Having a common acquaintance to vouch for the project, can often provide an access otherwise unobtainable.

This way of convenience sampling and recruiting affects the makeup of the participant-group and in itself creates a selection bias in what kind of empirical data is gathered (Lazar et al., 2017; Stratford & Bradshaw, 2016). As will be mentioned in section 6.1, this bias in recruitment affects the empirical material, as i.e., all interviewees, companies and organizations, are based in Oslo.

3.2.3 A Qualitative Study

This thesis is based upon a qualitative study of how Design leads are working to strengthen the role of design in their companies or organizations. The study is describing and explanatory in its form, where its design has been to research the role of Design leads through qualitative methods in order to study this phenomenon (Kalleberg, 1996). Doing a qualitative study provides possibilities to research how interview subjects describe a given topic and it is here used to describe a role and how they work (Kalleberg, 1996; Ringdal, 2013; Stratford & Bradshaw, 2016).

3.2.3.1 Methodological Considerations

The field of interest for the thesis is very much concerned with how design and the Design leads' work is understood and perceived. Thus, an emphasis on social organizations, experiences, values, and relations would be relevant for choosing a guiding research paradigm, along with a qualitative approach to data collection and analysis (Ringdal, 2013; Stratford & Bradshaw, 2016). A qualitative approach for projects such as this, is not concerned with generalizing and finding evidence for phenomena. Instead, it is interested in the social lives of people, how they perceive situations, and their experiences hereof (Ringdal, 2013; Stratford & Bradshaw, 2016).

3.2.3.2 Methods for Data Collection

The empirical data have been gathered through 11 semi-structured interviews. Semi-structured interviews are a technique within the method of interview that is suited to gather rich and deep data, while being flexible in its approach, to explore themes provided by the interviewee. The interview is guided by an interview guide prepared beforehand, with room for questions and themes diverging from the guide. The semi-structured interview produces data in the form of, often, transcriptions (from recordings) and observational notes (Crang & Cook, 2007; Lazar et al., 2017).

This kind of qualitative data is fitting to study the experiences, presentations, and understandings of the participants' work and situations, as it is possible through dialogue, to ask for explanations and elaborations of the interviewees (Crang & Cook, 2007; Lazar et al., 2017).

The interview guide for these interviews took its starting point in the concept of DesignOps. To explore this concept and connect it to the practices of doing design in the industry, I chose to focus indirectly on the concept itself. There was a possibility that not everyone knew the concept from before, as few would mention it on their websites or blogs from their design team. Instead, the interview guide was a way to split up the concept of DesignOps, into the themes of 1) the Design lead, 2) 'the state of design' on site, 3) how the design team is organized, 4) challenges they face, working with design on site, and 5) how the design team relates to the rest of the company or organization and how their context affects the design team. The interview guide did include DesignOps by name at the end of the interview, in case this would be relevant to talk directly about.

The interviews started with providing the interviewees with information on the project and the formalities around getting informed consent.

3.2.3.3 Ethical Considerations

Since the project will handle personal information, such as recordings of interviews, and the handling of data will happen electronically, the project needs to be filed with the Norwegian Agency for Shared Services in Education and Research (SIKT, previously Norwegian Centre for Research Data, NSD) for approval (Norwegian Agency for Shared Services in Education and Research, n.d.). No information of special sensitive nature (like union affiliation or religious beliefs) will be collected.

Central for data collection involving people, is to inform and get consent to participation from the participant. The often used means of securing this, is the (informed) consent form. When filing my application with the SIKT, I attached a template tailored to my project, which again will be built on the (legal) criteria conveyed as guidelines by the Norwegian Data Protection Authority (Norwegian Data Protection Authority, 2019) and the Norwegian Agency for Shared Services in Education and Research (Norwegian Agency for Shared Services in Education and Research, n.d.) for an informed consent form.

Since I plan on interviewing and observing people in work environments, I do foresee some ethical questions or balances to rise and manage. Asking about work and how work is done, could be interpreted as somewhat invasive and would not be welcomed if the involved participants fear that something will be interpreted wrongly (Lazar et al., 2017). Here, this is a balance that needs to be kept an eye on, as "exposing" the participants' work and work practices isn't the aim of the project and is something to be avoided. (Lazar et al., 2017) suggest

that this is a common concern and balance to be made in, e.g., ethnographic studies and others where the researcher studies what people do (Lazar et al., 2017). This is then dependent on an 'in' in the organization or firm that will be the focus of the data collection.

3.3 Data Analysis

The analysis of the empirical data material has been conducted following the overall steps of thematic analysis. The procedure of thematic analysis is concerned with a high degree of flexibility from theoretical frameworks and in general puts emphasis on the process of finding themes and categories throughout the material (Braun & Clarke, 2012). (Braun & Clarke, 2012; Malterud, 2012) emphasize the flexibility of Thematic Analysis, by showing how it can be used to analyze across the material, where the material is split in subgroups and themes and codes are derived in the process (Braun & Clarke, 2012; Malterud, 2012). This flexibility can also be seen in the method's relation to i.e., theory. Where some methods of analysis are very closely bound to theory or values of inductive (such as Grounded Theory) or deductive research, Thematic Analysis is not bound by these notions (Braun & Clarke, 2006). A thematic analysis is thus feasible for this thesis, as it draws more on various concepts from the related literature, rather than a full theoretical framework.

3.3.1 Phase 1: Coding

For the first phase of the analysis, the material has gone through the initial steps of thematic analysis suggested by (Braun & Clarke, 2006). In the first phase of the analysis, the process towards analytical categories began by getting familiar with the material through transcription and notetaking. Transcribing the recordings supplemented the notes written by hand during the interviews (Braun & Clarke, 2006). To get a frame of reference for the notes and relevant quotes from the material, initial codes were based on the themes presented through the questions in the interview guide. The codes can be seen in Figure 1:
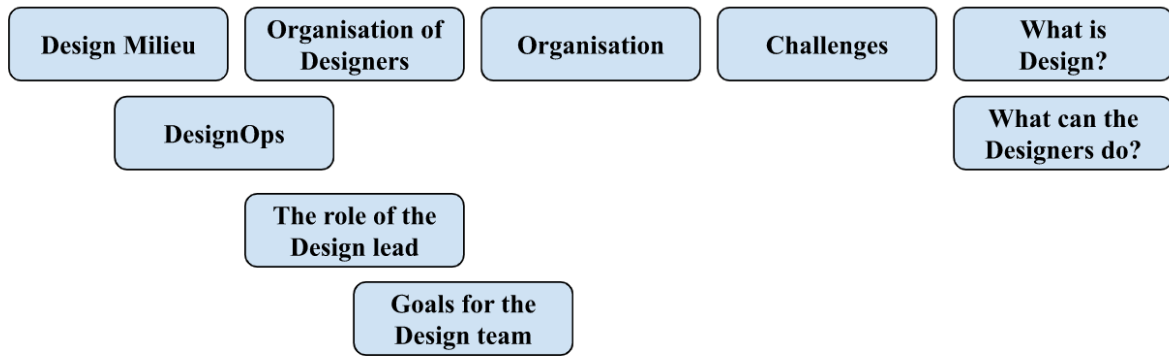
Figure 1: Codes from interview guide

These themes from the interview guide were made through taking different aspects of the concept of DesignOps, thus being able to interview about DesignOps without locking the interviewee into only focusing on the particular concept. Whereas the role as Design lead was part of the interview guide, it did not take up much space initially. Though, when going through the transcriptions and handwritten notes, many interesting aspects of the role of Design lead became clear. With this realization, this role was also added to the themes through which the material would be sorted.

Having initial themes on hand, the sorting of notes from the interview material could begin. With the themes as guides, the notes and quotes were sorted in an affinity diagram (Lazar et al., 2017; Preece et al., 2015). Each interviewee was represented by a colored sticky note, making it easy to distinguish the lines, differences, and connections between different statements. This was used for both seeing the red line internally in each separate interview, and how the interviews related to each other.

3.3.2 Phase 2: Developing Codes into Themes

Going into the next phase of the analysis, the focus began to shift into actively asking questions to the data material and finding commonalities and differences in the data. Formed by the interview guide, through this phase of the analysis, it became important to understand; 1) how organizations organize their design department and design team; 2) what challenges do they meet both as a discipline and as an individual on the design team; 3) What role does the Design

lead play, and why/how are they relevant; and finally 4) How does the framework of DesignOps relate to this organization of the design team and the challenges design face?

These initial thoughts led questions to be asked to the data. The questions revolved around relating the initial notes to the research question[4] at the time. The questions that were made to the data, were connected to the themes of the interview guide, and meant to connect the notes across the interviews to form an understanding of the material.

An example of this process can be found below:

Question	Notes	Elaboration and quotes
What are the challenges the design department faces?	• Non-designers/leaders believe design to be "just" decoration and to make something pretty. ○ By being included - several sees that design is more that just focused on the exterior. (eps. Interview 3) • Demand to make design as a field less of a mystery. What are the designers actually doing, how are they working and how are their processes. • It is not clear for non-designers what the differences between different design-disciplines are or why there is talk about different design competences. • Problems regarding early involvement in projects. • A felt need to justify and provide proof of how design is valuable.	Design as a field is non-transparent and a mystery for some not involved with design. Non-designers not understanding the value of design and designers, and/or they have to prove their worth.

Table 2: Example of a question asked to the data

3.3.3 Phase 3: Dividing into and Developing Categories

As these new questions arose and were answered, the focus was moved towards the Design leads, and DesignOps as the focal point was sidetracked for the later discussion. Going into the challenges found in the data, it would then lead to searching for clues of how they worked with design and developing the department to either directly or indirectly address said challenges and conditions. Notes and quotes for this work were gathered across the data, seeing if and how

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[4] At the time of this phase, the research question was: "*What is DesignOps and how is design getting a role in IT projects?*", with the following tentative sub-questions: 1) What problem is DesignOps addressing? 2) What is the role of "Design"?

they relate and could supplement each other. What was then found, in addition to points on *what is design, what is the role of the designer,* and *the role of the Design lead,* were three main categories or ways of addressing conditions. These categories were then elaborated and the three strategies for countering the challenges presented were identified.

Transcription	Code	Description	Theme	Strategy
"Many of them probably thought it was something about drawing customer journeys and specifications, so they had to be part of deciding how things should be done. But what we do the least, is to decide how things are done. We rather try to listen." [Interview 5]	Challenge	Non-designers might find the design field non-transparent	Design as a mystery	Demystifying Design
"To organize the work so that it is as efficient as possible, so that we can create the best possible results, that's really what we want to achieve (...) but I really like taking care of the employees, and design is a bit of a special field to manage and organize people with specific skills (...) I strongly believe that you have to acknowledge that not everyone has the same qualities, people have different personalities, you have to feel good at work, and many of these soft values have to be in place for it to work." [Interview 4]	Organization of designers	Organization is done to support the designers sitting out in project teams	Organization /activities as support	Organizing and developing a Design Milieu

Table 3: Examples of the process from quotes to strategy

Identifying the strategies were an interpretation of how I came to define the categories of the data. None of the interviewees were talking about strategies per se. But they would talk about their activities, thoughts, and experiences, when also talking about the conditions of the design teams and the challenges they face in their work. Having ways to counter and work in these

contexts, would then become the three identified strategies.

The three strategies are: 1) Demystifying Design, 2) Arguing for the value of Design, and 3) Organizing and developing a Design Milieu. The strategies were named to as best as possible describe the activities of the Design leads they entail. Each strategy addresses different aspects of the work to promote and strengthen the role of design, and at some points address the same challenges through different angles.

4. Findings

In this chapter, I will present the findings of my study. The central part of the findings are the three strategies identified as ways to counter some of the challenges the Design leads and design as a field in IT and IT projects, face in their position. The three strategies I identified through my analysis are: 1) Demystifying Design (4.2), 2) Arguing for the value of Design (4.3), and lastly 3) Organizing and developing a Design Milieu (4.4).

Before the presentation of these strategies, I will present the findings surrounding the interviewees' understandings of *What is Design (4.1.1), What is the role of the designer (4.1.2), and what is the position of the Design Lead (4.1.3).*

4.1 The Question of Design in IT

Before presenting the three identified strategies, this section will present how Design is being defined and used by the interviewees, and how the Design leads see their position. Design as a field and discipline transcends multiple arenas and the definition hereof will therefore clearly vary. The interviewees are here talking of design in the context of being part of technology departments and involved in IT-projects, in their respective companies and organizations.

4.1.1 What is Design?

The interviewees of this study's data collection are all engaged professionally with design as a discipline, primarily focusing on digital design and practices related to the usability and user experience of IT-systems.. All interviewees are working with designers and the design field on a day to day basis. Not all interviewees come from a design educational background. However, what is common for all, is their belief in the importance of the value to products and systems that designers can contribute to, by focusing on usability. Overall, design is presented in three ways in the interviews; as problem-solving, as a competitive advantage, and as a mediation between fields and interests, such as those from, users and stakeholders, while maintaining focus on the end user perspective.

> "Many of them probably thought it was something about drawing customer journeys and specifications, so they had to be part of deciding how things should be done. But

what we do the least, is to *decide* how things are done. We rather try to listen."
[Interview 5]

A majority of the interviewees define design as "problem solving". These problems that need to be solved are connected to ensuring usability in the final products, while balancing between use of technology, user and stakeholder needs, and business. Here, design is used to both understand the problems at hand and work toward a solution that incorporates the complexities often associated with the problem. Design, values and activities such as gathering insights from users and stakeholders, is then the vessel to create an as appropriate solution as possible within the constraints of the project. The appropriate solution is then something that stretches across multiple levels. From the potential to examining the root of the problem, whether the defined problem is the right problem to address, and further up to addressing user needs and ensuring usable interfaces and user experiences.

Some interviewees working in the private sector emphasize design and Design Thinking as attributes and guidelines for how they should and could work, putting emphasis on fulfilling user needs and leveraging that as a competitive advantage. In this case, being able to measure the outcome of good usability becomes crucial, both outwards towards clients and inwards in order to better the position of the design team in the company.

Internal budgets, and the funds allocated towards the design department, are of course relevant in public organizations as well. However, when defining and talking about design, the interviewees from the public organizations frame *design as a competitive advantage* from another angle. For those working in public organizations, design, and working after design methodologies like Design Thinking, is a means to reaching organization-wide and state mandated goals of universal usability and fulfillment of public service demands. Design methods and practices are used to enhance the importance of user needs and as a tool to help secure these in the project. What differentiates these two internal differences is whether the focus primarily is creating revenue or fulfilling public service demands by meeting user needs.

The final dimension of how design is framed is the emphasis on how design practices can help connect the different disciplines in project-wide problem-solving. In other words, design is presented as being able to be a mediator between multiple fields, getting these to work together

while ensuring usability. This mediation through design practices is done through the activities of creating concepts and providing visualizations to convey problems and ideas.

4.1.2 What is the Role of the Designer in IT-Projects?

As the notion of what design is and thus its role in IT take multiple forms, so does the presentation of what the role of the designer in IT-projects is. To present how the role of the design professionals are talked about in the interviews, three main points will be highlighted. The first and central point is seeing the design professionals as advocates of the users and their needs. The second highlight is that of seeing the design professionals as both holding a form of expert role in their field and the counter perspective of designers instead being mediators of experts. The third and last point is the points of design professionals, through their position, being able to be the ones asking questions in the projects. This point is presented through the example of how this position differs from in-house designers and designers hired in from consultancy firms. This distinction further shows how designers are seen and positioned given their affiliation to the company or organization, are they holding an insider position or that of an outsider?

4.1.2.1 The Advocate of the User

There is a common understanding amongst the interviewees that designers and design professionals act as *advocates* for the users. They do this through having their perspectives with them throughout the project, by keeping track of user insights and the role of the user in the project specification and ensuring design decisions are being made with these considerations in mind.

This advocating role is something that the interviewee in interview 3 expands on as being particularly important when having projects mainly dominated by more "technical" employees:

> "But a bit like we started with, developers can quickly become very strong if you have a team leader with a technical background. You have four developers on the team. Then it's super important to rewrite code and new system architecture. Maybe the customer requirements can become a bit hidden. So having the designers maintain a customer focus and act as the customer's ambassador, and getting the team to solve the tasks, I think that's the future." [Interview 3]

In this extract the designer is presented as the one having to keep track of the user and client needs and keep that focus present in the project. The interviewee mentioned how non-technical considerations might be overlooked or not given special attention to, if all others are having their focus on the more technical side of the project, or the team leader has a technical background. The potential for collaboration and knowledge sharing between disciplines, such as designers and non-designers, remains uncertain.

When working with design processes it might not be a surprise that this notion is dominant. Design processes are grounded in gathering insight and using that knowledge to make products and services aiming to be usable and fitting for the users, as well as within the requirements of clients or other stakeholders,and letting that affect the demands and specifications of the projects. The interviewee of interview 9 concurs with the importance of the insights and evaluations fronted by designers as important elements in projects. Where this differs from how design and designers are normally positioned, is the effort put in to bring non-designers, which are most often developers, into the initial insight phases and together creating rapid prototypes and testing concepts across disciplines. The interviewee describes this effort as having a positive impact on projects, where developers, along with designers, gain early ownership of the problems at hand they are trying to address. Consequently, user advocacy and problem-solving become a shared responsibility rather than solely the domain of designers.

4.1.2.2 Experts and Mediating between Experts
Based on the interview conducted, the role of designers in projects can be categorized into two perspectives based on the interviews conducted. Some interviewees regard designers as experts, responsible for ensuring the usability of the final product, while others view designers as mediators who facilitate collaboration among different disciplines.
For those who see the designers as experts, it is described as a somewhat boundary drawing to point out how design decisions lie with the designers and design competence, like it is used for how other professions in their own fields are regarded. It is mentioned in the interviews that the designers are the ones expected to hold this expertise of design and the whole process of designing, and while non-designers can be part of this process, the designers are the ones in the end of the day that need to bother with Design Thinking and being the advocates of the user needs.

While non-designers preferably should have or gain insight into how designers work as well as the problems at hand in the projects, it is not expected that these non-designers should become designers themselves or be bothered with the ins and outs of Design Thinking. It is implied here that sharing knowledge and understanding across discipline lines is overall beneficial for the team, but at the end of the day, the designers are the ones dealing with designing.

Another take on whether designers should be considered "experts" is the one moving designers out of the center of the team. It is not to dismiss the designers' expertise - rather it is placing them as part of the team along with the rest:

> "I believe that designers can help to involve and improve others, and get us to work together. It can be an equally important role for designers, in addition to providing the knowledge and processes to solve this. But it's not like designers are the Master of the Universe. It may be a bit painful to say that, but it's about being able to do things together and that we need to become better at recognizing each other's expertise." [Interview 3]

> "But here I have the understanding that, I feel that it is those around me who create things. But my role is to get them to create things. So there are two widely different starting points. (...) I need designers to get those who work here to create things (...) We [designers] build bridges and provide the methodology. They provide the common language. Through holistic approaches, conceptualization, and visualization. That is the idea. It is a universal language. Visual language (...) Fields of expertise become less important. Everything becomes less important. What becomes important is an idea. And when you see an idea, your experts begin to think, 'What can I do to contribute to making this a reality?" [Interview 8]

Design and the role of designers then becomes a form of practices that help translate between disciplines and connect these.

These two perspectives are not mutually exclusive. Rather, they present some nuance to the centering of designers as "the problem solvers" and experts at this. Both perspectives place the designer as part of the team but differ in how 'essential' the design role is for the project. Metaphorically, in the expert perspective the designer could be illustrated as an island the other islands (non-designers) can visit and gain knowledge from, whereas in the mediator perspective

the designer acts like the boat that carries the other islanders between the islands themselves, facilitating collaboration.

4.1.2.3 The Difference between In-house and Consultant Designers

A significant distinction can be observed in the data regarding how designers are perceived and discussed when comparing in-house designers and with those working for consultancy firms. The differences take two routes in the forms of 1) how designers are able to assume the role of critical question-askers, and 2) how the designers are regarded in the organization.

Firstly, it is evident in the material how leaders of the companies and organizations with in-house designers, talk about their designers as being able to ask critical questions. Such questions are often about the project's direction and final product, including its intended audience, its effectiveness in achieving its goal, and sometimes even the necessity of the project itself. However, it is not made explicit here which designers can hold this position, they are just generalized as 'the designers'. Being able to ask questions and be heard is still dependent on the perceived internal value and standing of the in-house designers in the organization.

In contrast, if the Design lead comes from a consultancy firm, it is clear from their perspective that they, or rather their designers, may not hold the same 'safety' to enter such a position of 'safe' question-asking. The interviewee points to this difference:

> "One can easily say to a consultant: 'Then we'll drop that agreement' or 'We'll take someone else who does exactly what we want.' Not those who ask a lot of questions" [Interview 4]

The interviewee here has experience as an in-house designer before becoming a consultant and makes this contrast clear. This position of being vary about asking questions or question how things are done, is both tied to 1) how consultants come into organizations and propose changes and 2) the level of design maturity of the client's organization, such as: what are they realistically expecting from consultants from the field of design? Interview 4 and 7 both pointed out an organization's design maturity as indicative of how the clients' understanding of design could lead to undervaluing the design work. As a way to mitigate this issue, the consultancy firm could argue for the use of two designers instead of one (doing 50/50 to utilize their strength

in the different parts of the project) as the design part otherwise in the project was under- or one-dimensioned. This specific example is found in interview 7:

> "So we see that when we write proposals now. Instead of offering one person, we might offer two people at 50 percent each because they complement each other and can give the clients something more, and then try to make that visible in the proposal work. We recommend that in phase 1, we start with one role, and halfway through phase 2, the other role comes in and complements the knowledge." [Interview 7]

Another solution is simply not bidding on the project proposal, where the prompt for the designers would show the inadequate knowledge of what designers do:

> "But what characterizes them is that they write a good brief. They have defined a challenge and not a solution. That's the first thing. If a brief comes in and you see that it's really just described that we should have a website. It's like we should have so many pages, and it should have a cool design, and we like blue." [Interview 4]

Here, the interviewee describes how clients with design maturity will describe a problem without prescribing a solution, whereas less design mature clients will regard design as a finishing touch, and describe the solution they want: "We want a website and we like blue" [Interview 4].

Secondly and finally, the development of the design team as presented by the interviewees, is mostly directed towards in-house employed designers. Part of building the design teams, is the focus on leveraging the skills of the designers in the organization and creating a good environment for design. This is seen as a way to both invest in the design competence in the organization with the goals of building competent, stable, and long term, design teams that may also be attractive to new talents. Therefore, most Design leads point to the investment in in-house designers as a long term strategy where consultant designers are part of the design teams, but not necessarily part of the local efforts for upskilling.

Consultants are overall seen as someone temporary; both in a positive and negative sense. On the positive side, consultants are viewed as someone who could share new ideas and methods within design:

"Like [client company] for example, they are quite advanced, so they have their own design department with internal designers, who also have quite a lot of training, they have a design forum, they do some things that external designers or hired consultants can also participate in, to share expertise, improve skills, and so on." [Interview 7]

"...then it was to work in the team with two other designers, and teach them a bit of service design while we do service design." [Interview 4]

as well as provide huge flexibility when the organization needed to up- or down-scale on design:

"Yes, we do have a large proportion of consultants with us, and it's very nice to be able to scale up and down as needed, because you can terminate them as you want, but it's important, first of all, to build up good designers internally. That's important for preserving expertise in-house." [Interview 2]

Nevertheless, consultants could, because of their temporal flexibility, be seen as "outsiders" whose advice or ways were seen as disruptive to the client organization:

"So when we come in and say that you should do it this way, we might encounter some resistance because it's something completely new for the clients to work in that manner." [Interview 7]

or the temporality be seen as a means to alleviate menial tasks:

"But I don't have that impression. We believe that we have the best people in-house, and we want to use those people. Then it's also very important that if we want to bring in consultants, it's not for them to do the fun jobs. We want our people to do the fun jobs, and if we need consultants, it's more to be hands rather than heads." [Interview 10]

This notion of them being temporary, mirrors quite well some of the skepticism designers are met with from non-designers, though addressing two different aspects of the involvements of designers in IT-projects. Advancing and investing in in-house designers is, by most of the interviewees, seen as a response to the down-sides of hiring consultants. It is seen as an investment long-term and as a way to establish a design practice on site. This does not however deem consultants needless or redundant.

4.1.3 The Role of Design Lead

The Design leads are the ones who are typically in charge of the design departments or rather the managers of the employees working with design. The term design team also refers to this overall group of employees working within the field of design and often placed out in the project teams, rather than a sole team only consisting of designers. In this section, how they describe their position and work will be presented.

The interviewees all work in the field of design, but not all have a background as a designer. Some are originally trained in software engineering, communication, architecture, or fully disconnected fields. What is common for all, is the eye for design and the value designers can create.

The interviewees describe how they are responsible for, either in part or fully, creating a supportive design milieu. Building the design milieu serves many purposes, but mainly centers around the goal of creating the best possible results and having satisfied employees:

> "To organize the work so that it is as efficient as possible, so that we can create the best possible results, that's really what we want to achieve. And it's a bit like this, how can we organize the work in the smartest way, but I really like taking care of the employees, and design is a bit of a special field to manage and organize people with specific skills. It can be both demanding, but it can also be, if done well, you can get the best out of people. But I strongly believe that you have to acknowledge that not everyone has the same qualities, people have different personalities, you have to feel good at work, and many of these soft values have to be in place for it to work." [Interview 4]

Their role is most of all to create a good environment for their employees to work in. This comes, from amongst many factors, through acknowledging how designers might be special, design processes and work practices might differ from other disciplines, and actively working with and seeing each designer's different skill set.

Another point several interviewees make is how they also see themselves as a form of guard or buffer for the designers. This position as a guard is to make sure the designers both fit the given projects, both skill set, experience, and personality wise, and that their efforts, or results stemming from design work, will be appreciated and acknowledged by the given project lead in the end:

"And then it's my job, to ensure that a designer doesn't get overwhelmed, that I can take that step beforehand and say: where is it needed, in that case, this requires so and so, in order for us to be able to help you, it presupposes this etc. I don't want to put a designer in a situation where they feel like they're doing the wrong task, or that they're not adequate." [Interview 2]

Being a guard serves two purposes, one is to take care of designers in projects, and the other is to educate project leads who may not know how to fully utilize designers, or who desires to use *Design Thinking* without knowing how.

The work of being a buffer is also a task of spreading knowledge of what the design can and cannot do, and promoting the design team internally in the company or organization. This is seen as important, as that affects in what ways and how much they can be included in future projects:

"And socializing, like helping others who are not used to working with design, understand the impact and the benefits and strategically why they should involve us early on in projects. I think that's a continuous work. And some we have, like if you see the stakeholder mapping, there's some that are like green partners that are used to involving us and love to involve us. And we also have partners that are not used to working with us that are sort of, oh, why should we involve them? So we're working all the time with becoming sort of a preferred partner for all of these stakeholders in the organization. But that I think happens when we are voicing, like presenting cases, examples of how we have worked in cross-functional teams and projects and cases. So I think voicing that is something that we do (...) these cases come up and are presented for the divisions in those gatherings." [Interview 1]

The essentials here are that the other heads of departments and higher ups know what the design team does. This is done by 1) speaking up to their attributes and inviting others in, which is elaborated on in section 4.2.1 and 2) showcasing the design work through cases and tangible measures, which is elaborated on in section 4.2.2).

The interviewee from interview 11 is not a Design lead in the sense that she has responsibility for personnel like the rest of the interviewees. Baked into their roles is the responsibility for the design personnel and being their closest manager. Alas, the interviewee from interview 11 holds a similar role in regard to representation of designers in the organization's overall defined

strategy and represents the designers in this forum in the same way as the other Design leads do.

4.2 Strategies for Strengthening the Role of Design

In the following section, the three strategies identified through the data analysis will be presented. The strategies build on the findings of section 4.1.

Strategy	Description
Demystifying Design	The first identified strategy, *Demystifying Design*, is concerned with how the Design leads work to create awareness and knowledge of what design as a field is and what the designers as practitioners can contribute with, in IT-projects. *Demystifying Design* is done through inviting non-designers to get insight into the field and for them to gain understanding of design practices, methods, and values. The aim is to create transparency of what design work and practice is and show how working with design entails more facets than being about *making pretty things.*
Arguing for the value of Design	The second identified strategy, *Arguing for the value of Design*, is concerned with how the Design leads work across organizational levels to argue for the value of the designers and the design team at the company or organization. This strategy is divided into two subcategories of 1) Proving the value of Design, and 2) Advocacy for the designers. The subcategories describe how Design leads work both on the side of providing proof through results to argue for the benefit of having and developing on a design team, and on the other hand use their position to guard the designers against potential mis- or underuse of their skill set in their project teams.
Organizing and developing a Design	The third strategy, *Organizing and Developing a Design Milieu*, addresses the actions Design Leads undertake to 1) establish a

Milieu	supportive environment for their designers, and 2) cultivate design as a discipline within their company or organization. The goal of this strategy is to foster an optimal learning environment and work conditions for designers, while also integrating the design team as a crucial component of the company or organization through coordination and communication with other disciplines.

Table 4: How Design leads work to strengthen the role of Design in IT-projects

4.2.1 Demystifying Design

The first identified strategy, *Demystifying Design*, is concerned with how the Design leads work to create awareness and knowledge of what design as a field is and what the designers as practitioners can contribute with, in IT-projects. *Demystifying Design* is done through inviting non-designers to get insight into the field and for them to gain understanding of design practices, methods, and values. The aim is to create transparency of what design work and practice is and show how working with design entails more facets than being about *making pretty things*.

4.2.1.1 Challenges

The question of what design is, what designers do and how they work, and how these fit into the world of IT, is what could be seen as a type of knowledge gap regarding design. As shown in the previous section, how design can and is being defined and understood varies greatly within professionals in the field, and thus, the boundaries of what constitutes 'design' and the field hereof can be quite unclear. Part of the Design leads' work is to address this knowledge gap and the challenges they face stemming from that.

When the interviewees are addressing this knowledge gap as a challenge, it does not mean complete lack of knowledge. It should be noted that they are all working in companies or organizations where there are employees who are employed under the title of "designer", and they themselves are holding a title of some form of "Design lead" or "leader of the design team / department". It is thus reasonable to assume that design as a field in IT and IT projects are not entirely unknown nor new in the companies and organizations. Alas, having non-designers fully understanding and supporting the field of design might be beyond what can be expected.

Nonetheless, the interviewees point out this non- or misunderstanding from non-designers as a challenge they face in their work. Setting up the expectations of cross-discipline understanding and cooperation in projects is one of the benefits and goals of doing cross-functional teams. Therefore, having others not understanding what the designers do and then not including designers in appropriate projects, might be a problem.

Further, the interviewees, working often on the level above the designers in the corporate hierarchy, are seeing how this knowledge gap, from the perspective of the designers, is affecting them in different ways. Firstly, non-designers understanding the designers' role and their advocacy for the users and stakeholder, can alleviate some of the responsibility for usability laid on designers. As it will be elaborated further on, having developers in on and "owning the problems" alongside designers can have positive effects on the project and the products produced. This is connected both to lack of involvement of non-designers in the design work, i.e., insight, and not using designers to their full potential by involving them early on in projects, to fully utilize them for a part of the problem definition and potential solutions. Secondly, as it has been touched upon in section 4.1.3 and will be elaborated in section 4.3, the understanding of designers' role and design affects how they are perceived and included in projects. Not all projects need a designer, and design thinking might be used where not relevant or applicable, or used without substance. Within this point, the interviewees also include the lack of understanding from non-designers of how design disciplines internally differ and how they complement each other and work together, and how designers are not necessarily all-around in their skill set. An example of this can be seen in the following extract:

> "We can wish for a lot, but the understanding of why we often want to have more designers, how one might want a design lead, and why one needs an additional designer, and how you can actually be more efficient by being a team, and the understanding around how one works as a designer, has actually been the most demanding in order to be able to organize it in the right way." [Interview 2]

Through these challenges of how the perception of design affects how there is and can be done, design can be seen as quite a "mystery" or as being non-transparent by non-designers, if these are examples of what they face in their work.

4.2.1.2 Countering the Challenges

Based on these presented challenges, actions being taken by the Design leads to counter these and close the knowledge gap, are here being characterized as measures to 'demystifying design'.

A first example of how they are demystifying design, is through actions and events to 'open' the design team and milieu to interested non-designers in an attempt to make the design field and team more transparent. With talks, workshops, and inclusion work, several of the interviewees are able to promote: who are the people working with design, what are they doing, how are they working, and how can we be included in a meaningful way in projects.

> "But mostly it has been about informing. What is it that we do? How do we work? Why does it provide value? What do you think it is? What do you think it's not? Both on individuals and in common... We sign up for educational days and say, 'We can talk a bit about design, or we can talk a bit about this and that.' So sharing information is important to us because it increases the competence of those we work with." [Interview 3]

By working on transparency, they also lay the groundwork for later meaningful inclusion of the designers. Because; how can other discipline leaders and project leaders make use of designers, and the milieu behind, if they are not fully in on the potential for design inclusion in the given projects?

The interviewees describe how often non-designers can be surprised after getting insight into how designers work and can create impact:

> "So they have also been allowed to participate a bit to see how we work and what it is. Most of them have dropped out though, because it wasn't what they thought it was. A lot of them thought it was about drawing user journeys and defining requirements, so they would be involved in deciding how things should be done. But what we do the least is decide how things should be done. We try to listen. And it has been a kind of training process in organizations to work on gaining an understanding of insight work. And only in that way, in order to understand and build user empathy, do you also build good solutions to support. And then we involve the whole team in that." [Interview 5]

Part of getting insight into the field of design is discovering how their perception might differ from the reality. Gaining this insight also invites to foster understanding of how designers can be integrated in projects, without it meaning all non-designers needing to become, or even think

like, designers themselves. Instead, they get to be part of 'owning' the problems they are working with and how designers are working with these problems:

> "Well, at least they are able to say, 'Oh, it would be nice to work with a designer here.' They may not become fully trained and confident in the methodology, but they become somewhat familiar with the mindset we have, that we need to talk to the customer, we need to interview. (...) They learn that 'Okay, if you conduct an interview and you see that some questions don't work, you can change it, iterate, and then it works better with the next person.' So they see a part of this prototyping and iterations mindset that designers have, which others may not necessarily have because they complete tasks and then share them. We share and do things a little differently, a little faster." [Interview 3]

The inclusion of non-designers and involvement of designers early in projects, is presented by the interviewee of interview 9. By facilitating early cooperation and sharing the problems of the projects, they are able to research, prototype, and test ideas and early stages of products fast. Having the whole team involved makes this possible, and they are able to find viable ideas and solutions fast:

> "Because until you have put something in front of a user, you don't know how they're going to respond to it. So the faster we can get something out there for them to respond to, the fewer development mistakes we make. (...) Not like interdisciplinary, if you can put it that way. By interdisciplinary, I mean sitting together in a team, but having very separate tasks. But what we're trying to achieve is to collaborate from the very beginning. Developers are present and listen to the user interview, which enables them to also suggest how to address the issue." [Interview 9]

It is in this interview pointed out how this involvement of non-designers creates and promotes ownership for the project team of the problem and solution, which in turn also affects the motivation. The success of this kind of involvement, one can assume, is always subject to personality and person, but it underlines the importance of knowing what coworkers and employees of other disciplines are doing, how, and why they are doing what they do.

4.2.2 Arguing for the Value of Design

The second identified strategy, *Arguing for the value of Design*, is concerned with how the Design leads work across organizational levels to argue for the value of the designers and the design team at the company or organization. This strategy is divided into two subcategories of 1) Proving the value of Design, and 2) Advocacy for the designers. These subcategories describe how Design leads work both on providing proof through results to argue for the benefit of having and developing on a design team, and on using their position to guard the designers against potential mis- or underuse of their skill set in their project teams.

4.2.2.1 Challenges

The challenges the Design leads face are spread over multiple levels in the organization, where it is described as related to how design is perceived and valued, indirectly, as a discipline. This is often closely related to the aforementioned knowledge gap issue. The previous section addresses the first identified strategy as the aim to demystify design, where it happens on a more individual and project level. The challenges however are also present on a more organizational level, leading to the second identified strategy of *Arguing for the value of design*. On this level, the work of the Design leads is focused on the company or organization structure, handling issues mostly in a matrix-structure, and budgets as they affect the design team. Through these challenges the Design leads both have to prove the value of design and work on behalf of the designers.

Since activities and tasks are done on more levels and with different goals and objectives, this strategy is divided in two, 1) Proving the value of Design, and 2) Advocacy for the designers. The first branch describes how value is argued for and needs to be proven upwards in the system in the company or organization. The second branch refers to the Design leads' work sideways and downwards towards project leaders, other discipline leads, and the designers themselves.

Figure 2 shows how the Design leads use their position towards three levels; an executive level, the level of project leaders or leads from other disciplines, and lastly, as the lead of designers, use their position to guard the level of the designers.
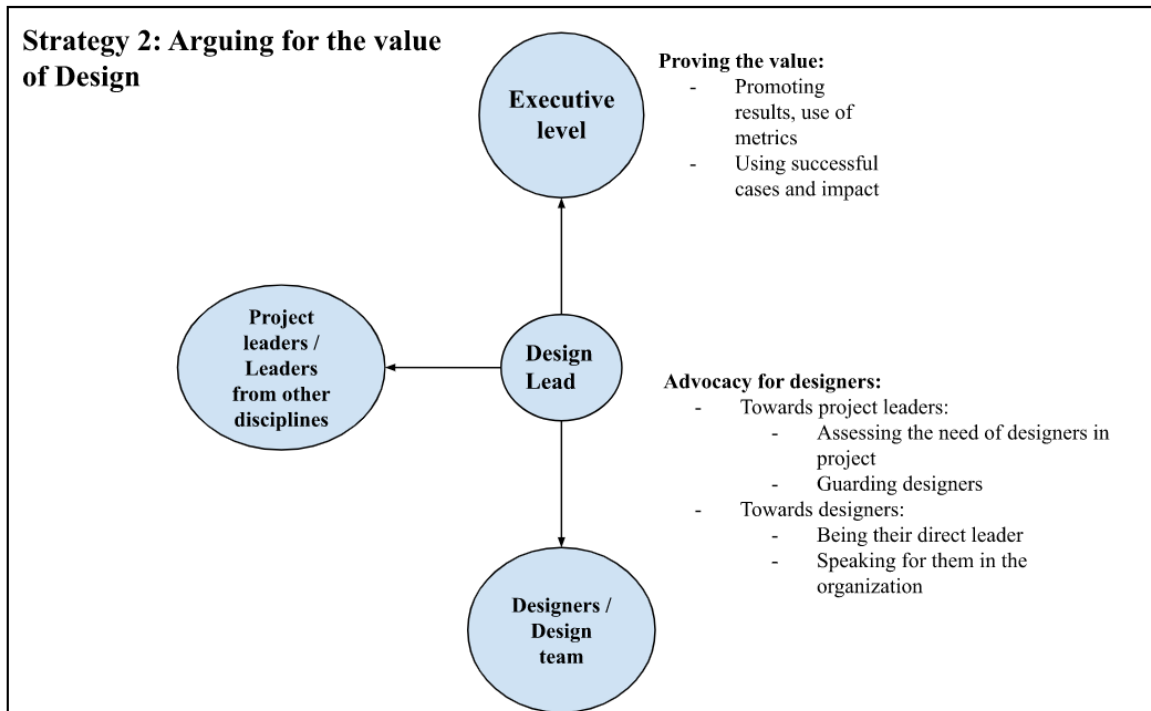
Strategy 2: Arguing for the value of Design

- **Executive level**
- **Project leaders / Leaders from other disciplines**
- **Design Lead**
- **Designers / Design team**

Proving the value:
- Promoting results, use of metrics
- Using successful cases and impact

Advocacy for designers:
- Towards project leaders:
  - Assessing the need of designers in project
  - Guarding designers
- Towards designers:
  - Being their direct leader
  - Speaking for them in the organization

Figure 2: The levels of the second strategy: Arguing for the value of Design

4.2.2.2 Proving the Value of Design

A challenge all interviewees have highlighted, in the process of developing the design team in-house, or promoting the design as a discipline further, is the work demanded in the process of convincing or *proving* the value of design in the organization or towards clients. The interviewees pinpoint how they, or their predecessors, have had to argue for the development of design teams, and that a design milieu would be positive for the designers in the organization. All of which further benefits the performance of designers, and ultimately the products and services produced. Through the interviews, it is presented how major decisions regarding restructuring and budgets in companies and organizations are based on financial motives and calculations. Therefore, to argue for the expansion or development of the design team, or further cultivation of the design milieu, it often comes down to an argument based on economics. The interviewees of interview 7 and 2 framed this work of "proving" as:

> "We constantly need to have justifications for why we should continue with design (...)
> So those kinds of things, but we struggle to constantly have the evidence we need to be
> open about the fact that we still have an important role." [Interview 7]

"Internally, we are working on telling who we are, how we work, and creating those experiences. Being able to refer to real cases where we have been involved in creating them is something we feel really adds value, and it's important to develop those aspects." [Interview 2]

Demonstrating value, as described by other interviewees, occurs through several means, such as successfully winning cases and showcasing the ability to create effective designs rather than merely rectifying issues. The job of proving this value is then on the Design leads, who need to appeal to the higher executive level and manage the design team. Therefore, arguing and showing the value of the designers will also affect their own position.

An example of getting good results from proving the value of design is seen from interview 9. In interview 9, the interviewee describes how the organization operated when she started. When she started in her position, designers were chasing results, and constantly had to prove their value. Designers were stretched thin, having to work on multiple projects at the same time and across multiple design disciplines that might not have been their strength. However, as she and her associates began to reform the design team, as well as ensuring the project teams were working more actively to incorporate designers and design insights earlier in their projects, the design leads' efforts began to show results:

"And then we saw that the outcome of those journeys was that we came up with quite a few innovative solutions, which in turn had an impact on the business. And then, what should I say, the organization saw the value of working that way, working a bit like design thinking. And it just gained a clearer and stronger position." [Interview 9]

This process included both the 'expertification' and specialization of designers, contrary to the jack-of-all-trades designer role as seen previously, as well as having designers work closely with the developers early in the projects. This transformation of teams and the roles of designers led to work practices and projects based on early prototyping along with early user testing. This resulted in the possibilities to, through different metrics, get tangible measurements of the direct impact of both using specialized designers and using them well. Consequently, this led to further investments in the design milieu, and increased standing of design internally in the company, moving it up the design maturity ladder. The interviewee here pointed out that they would become some of the first in Norway to have a position of

Chief Experience Officer (CXO) thus cementing the position of design as a discipline in the company.

Gathering proof and presenting it for higher ups to justify the investment in design is one part of what is here categorized under the title of "Arguing for the value of Design". It is aimed upwards in the organizational ladder by presenting the results of having design involved in projects and in the development of products.

Another factor in proving the value of design, is how the executives internally see the design department. Most consideration, one can assume, depends on the fiscal results of including designers and making usable products and services and the meeting of strategic goals. But, it is also mentioned throughout the interviews how the Design leads are also depending on having someone *on their side* in the higher ranks. An example of this can be seen in interview 5:

> "So she takes it from being a good initiative, and deep within the organization, this hierarchy, it is now at the top of her agenda. So it has reached a point where there is no longer a question of whether design should be involved, so we don't have to fight those battles." [Interview 5]

Here, the interviewee explains how the design team has benefitted from a shift in the management group when a design minded executive came in. With this change, the success of the design team was not solely based on the initiative of the design team and how they could show results, though results are still expected, but now they also have a *foot in* higher up. These *executive champions* can talk about the case of the Design leads amongst executives and influence i.e., budgets for the departments.

4.2.2.3 Advocacy for the Designers

Another aspect of arguing for the value of design, is advocating for the need for designers through the organization. As previously presented, the Design leads hold a leading role for the designers in the company or organization and are only responsible for the designers as personnel, and not the project or project teams themselves.

Part of the advocacy for the designers is making sure their skill sets are utilized correctly and is fitting with the project teams they are placed in. An example of this, is described by the

interviewee of interview 2:

> "It's just that people don't understand why we need so many designers. They think we should only have one designer who adds colors and buttons, and just does what the developer says. But we have come a long way from there. Now, we understand that designers should be involved in the process. However, the challenge lies in questioning how it should be solved, with the right staffing, which may require different budgets and types of participation and such. Ensuring that we are involved early enough is a challenge." [Interview 2]

Advocating for designers is done not only through managing the use of designers, but also somewhat protecting them from unsuitable projects. As is described, it is useless to send designers into projects where the project leads might see designers as "only" good for making things pretty and take directions from the developers. Instead, it is emphasized how the Design lead here is advocating for the designers' diverse skill set and actively promoting the task of making sure they have the *right people* for the *right projects*.

Part of making sure both projects and designers are right, is also to make demands to the ones in charge of the projects. This is often done through advocacy across the organization towards those in charge of projects and other disciplines who want to work with designers on their project, as seen in section 4.1.3. The following extracts show examples of where the Design lead make such demands to the projects:

> "And then it's my job, to ensure that a designer doesn't get overwhelmed, that I can take that step beforehand and say (...) I don't want to put a designer in a situation where they feel like they're doing the wrong task, or that they're not adequate. Now I'm going to set a requirement in return, that if we are to help you with this, this must be in place. Or that yes, we can participate and guide (...) require us to have more capacity, or others to be there a bit." [Interview 2]

> "That's why we are focused on uncovering the maturity level of the buyers right from the start. We have been in some meetings where we have said, 'I think we'll just decline that.' Because we can sense that it will become challenging (...) So the framework needs to be in place…" [Interview 4]

Demands can, as shown above, reveal how design-"ready" or mature the projects are. It is a question of knowledge of what designers do and whether their work is beneficial for the project: does it make sense to have designers connected to this? In this manner, design leads may argue for the exclusion of designers, or certain types of designers, if they are not suitable for the project.

Conversely, Design leads can also advocate for the inclusion of designers in projects that might not at first seem like a project needing design competence.

> "But then there may be a product owner who goes directly to the core system and wants a change to be made. And in that case, there are no designers involved or aware of it until it suddenly fails, perhaps on the customer front, because a change has been made that no one was aware of. That can be a situation like that. But here, we are working on guiding product owners in the right direction with the tasks they want to have resolved. Because then they can also look at it from a design perspective." [Interview 3]

The Design lead here advocates for the design perspective to be included from the start as changes to the core systems otherwise could cause ripple effects for i.e., usability down the line and affect the work of the designers.

A final note for the advocacy of designers, is of how the Design leads aim to *get into* projects early. By doing that they might affect the role designers get in projects, and create space to ask questions to the projects. She further explains how this early insight helps determine if and how the design team can both be utilized in a good way and getting to do fitting design activities and processes:

> "That we should be involved, and we are equals, maybe even with development and other project management, right from the start, is probably the most important thing. Absolutely everyone must consider design, that's our job, and then we should assist them in establishing a solid foundation for further development and tackling the right tasks. That's our role within a larger project. It's impossible to achieve a design mindset for everyone, plain and simple. But understanding what we can help them with, if we are invited in, is important and can assist them in that way." [Interview 2]

The advocacy done by the Design lead here, is part of making the design team heard in the company or organization. The objective, echoed throughout the interviews, is to ensure the team's involvement in projects from the outset. This allows the integration of valuable design

contributions, such as understanding user needs and validating products and services through testing, to permeate the entire process.

4.2.3 Organizing and Developing a Design Milieu

The third strategy, Organizing and Developing a Design Milieu, addresses the actions Design Leads undertake to 1) establish a supportive environment for their designers, and 2) cultivate design as a discipline within their company or organization. The goal of this strategy is to foster an optimal learning environment and work conditions for designers, while also integrating the design team as a crucial component of the company or organization through coordination and communication with other disciplines.

4.2.3.1 Creating a Supportive Design Milieu

The interviewees from the companies and organizations that are not consultants, all have something in common when it comes to how to manage and optimize work at the IT-departments. Throughout the interviews it is described how projects are organized in cross functional autonomous project teams which can function somewhat independently under a project manager which encourages close collaboration with colleagues from different disciplines. These autonomous teams then contribute to a broader matrix structure encompassing the technology departments of the company or organization as a whole.

In this makeup of cross functional autonomous teams, the designers are stationed out in different teams. Although some interviewees indicate that designers may shift between teams, most indicate that designers are integrated within the teams themselves. It is generally valued that designers are working out in teams, rather than in a separate all-design team. Having designers out in the teams, can create closeness between disciplines and affect cooperation.

At the same time, it is pointed out by several of the interviewees how designers need fellow designers. Ideally, the Design Leads place at least two designers on the same team, with the intention of local cooperation, brainstorming and discussions, and mutual support. It is mentioned a number of times throughout the interviews, how designers as a group are seen as more sociable and creative, benefiting from collaboration with their peers. The goal of the Design lead is then to make sure that the designers out in the project teams are not 'on their

own' in order to not overburden the designers and facilitate good design processes. However, even when multiple designers are assigned to the same team, the supportive environment of the Design Milieu remains crucial.

Creating a design milieu involves different actions taking place in the company or organization. A big emphasis is placed on creating a space for the exchange of ideas and creating room for discussions across project teams through sessions for all designers. Sparring is then mentioned as a key purpose of many sessions as these can function as room for professional discussion and the possibility to pick another's brain regarding issues and design decisions out in the projects. Interviewees also mention how mentoring is used in some contexts, i.e., where designers are spread out and potentially isolated due to insufficient design staff.

Several interviews also think of the design milieu as fostering a good learning environment for acquiring new knowledge and upskilling through internal talks or external sources, building design confidence, in addition to sessions of design critique. Design critiques can be done i.e., by a designer presenting the design process and results to the rest of the design team and then getting (constructive) feedback from the rest of the team. It is described how this can be somewhat tough and then it is important to feel secure in the room in order to do this. This is exemplified specially in interview 5:

> "And if you want to build a strong professional community, there needs to be a dedicated section, a place where you belong, where you can hesitate together (...) What we have focused on so far is building psychological safety and making the team a safe zone, in a way." [Interview 5]

The milieu for the designers, is then by multiple of the interviewees, described as a form of "home" or safe space for the designers. It is intended to be supportive and encourage professional growth and additionally, a social space for employees in the same profession.

Working with the creation of a (supportive) design milieu is both mentioned in the interviews with Design leads working in consultancy companies and Design leads with predominantly in-house designers.

4.2.3.2 Cultivating Design as a Discipline

Making conscious effort to enhance and develop a design milieu in-house can also be seen as establishing the field of design further as a discipline. The empirical data shows that integrating the design team with other disciplines is crucial for fostering collaboration and making the company or organization an attractive workplace.

An example of this further integration of design, is the development of design systems and how they help facilitate coordination and communication between developers and designers, in addition to increasing the potential for mobility internally in the company or organization for designers. Most interviewees mentioned working on shared design systems:

> "...that there is both a sense of safety and security, that there are people who check the code, ensure that it works, and have a framework and description of how we should design. But the fact that everyone is involved in contributing to creating good solutions means that it becomes a design system, and it is systematic, and it is very clear how we should work, so that designs are not created in different ways, and there is a structure in how we work..." [Interview 2]

One point is that the design system can tear down some barriers between designers and non-designers by establishing a shared frame of reference. When designers are making their designs, they are designing in the realm of the design systems, ensuring standardized forms and functionality for the company, but also providing documentation and code to i.e., the developers. This process keeps designers connected to the team and facilitates communication using a common language. By creating a common ground for design work done at the site, it can anchor some of the values many design professionals hold, such as the importance of usability.

Another point of the design system is to facilitate mobility for designers within the company. It becomes possible to both assist other designers on other teams, and to move around the other project teams as needed, because of this standardization of design language and its translation with other non-designers.

By structuring the design team and their efforts within the framework of the design system, it helps to solidify the design team's position within the company or organization. The design systems and coordination between the disciplines hereof counters some of the challenges and critiques Design leads and designers meet in regard to the assumption that design is a creatively

disconnected or mysterious field. Instead, designers become integral project partners, as their work aligns with the frameworks and references of other team members, such as developers.

Building on the internal design milieu, the company or organization may aim to enhance its visibility in the industry by participating in conferences and fostering a strong design culture to attract top talent. This serves not only as a source of inspiration for new ideas, but also as a means of promoting the design department as an ideal workplace:

> "Yes, but I also see a challenge in that we are perhaps better known as a content company and not as well-known as a technology company. So I think we need to become even better at showcasing ourselves to attract the best talent (...) So there is a very high demand for the best people. I would argue that we have the best design environment both professionally and personally, but also professionally throughout Norway. It's about having the most skilled individuals (...) Because people come to [organization name, interview 10] because they want to work on critical societal tasks and missions (...) So things we have previously taken for granted, we can no longer take for granted, because people will also go elsewhere. So I actually see it as a significant challenge to attract the very best people." [Interview 10]

Therefore, having a well-developed and supported design milieu is also a feature for prospective candidates, and not just an internal affair. It shows that design is taken seriously within the company or organization and that designers are supported in their work.

5. Discussion

This thesis sets out to explore the research question "*How are Design leads working to strengthen the role of design in IT-projects?*". The findings have presented three strategies to address how Design leads are working to strengthen the role of design: 1) Demystifying Design; 2) Arguing for the value of Design, through proof of value and advocacy on behalf of the designers; and 3) Organizing and developing a Design Milieu.

With these strategies, the thesis contributes to the literature on implementation of design and design and designers in IT-projects in general, and more particularly to the study on the role the Design lead plays in this and how these strategies are strategies of DesignOps.

5.1 Strengthening the Role of Design

My findings show that it can be useful to look at the Design lead and what they do, through multiple layers. The identified strategies: 1) Demystifying Design; 2) Arguing for the value of Design, through proof of value and advocacy on behalf of the designers; and 3) Organizing and developing a Design Milieu, are strategies to strengthen the role of Design in IT-projects. To make design decisions happen and being heard in software development processes (IT-projects), several success factors can be found in the related literature. Gulliksen et al., 2006 pinpoint how integration of design at the level of IT-projects ultimately is dependent on the following three factors; 1) getting into the team, 2) getting action space, and 3) creating leverage for usability within the project (Gulliksen et al., 2006, p. 570-1). Beyond cooperation with fellow professionals (as communication, interaction, and coordination of activities), the three presented factors are seen as essential for the strengthening of the role of design in IT-project. These three factors address the challenges outlined in Chapter 2.2 on 1) Compatibility with SWD processes, 2) Bridging the knowledge gap between disciplines, and 3) Taking responsibility for Usability.

In the following sections, the importance of the Design lead role in strengthening the role of design and thus furthering design maturity at their company or organization will be discussed.

5.1.1 Bridging the Knowledge Gap

The integration of design into software development processes relies on having usability knowledge and expertise on the team (Gulliksen et al., 2006). A critical aspect of this integration involves incorporating designers into project teams, and it is pointed out how usability and design concerns risks becoming sidecarred if not addressed properly (Boivie et al., 2003; Gulliksen et al., 2003). Lack of understanding of usability, and by extension designers and design, can lead to misconceptions on why usability and the work of designers are important (Boivie et al., 2003; Svanæs & Gulliksen, 2008) or non-transparent and the rationale behind cut off from the rest of the team (Gulliksen et al., 2003).

To bridge this knowledge gap, Design leads play a crucial role in their effort to *demystify design.* The actions entailed in the strategy of *Demystifying design* are geared towards inviting non-designers into their field by holding fora and inviting them to participate in design activities and workshops. The intention behind this, is to make the work of the design team transparent and show how they can be used in future projects. The rationale implicit in the strategy is, if non-designers know what the designers are doing and how they can be an asset, they will be included, and the Design leads are central in this effort. *Demystifying design* is then a step, though not critical, to get onto the project teams.

Managers are central in the area of getting the designers onto project teams, as they are where *expectations and responsibilities* of designers are defined from and thereby also creating the roles and possibilities for the designers (Gulliksen et al., 2004).

The Design leads are the ones managing *expectations and responsibilities* for designers through their work between the higher management and the designers. Managing expectations to what designers can contribute with, can be seen as part of the strategy of *Demystifying Design.* Uneven expectations can be grounded in, as the challenge was also presented, a fragmented understanding of design as a field. By clarifying the work of designers and addressing misconceptions, Design leads can potentially enhance the integration of designers in suitable projects and prevent their involvement in unsuitable ones. This can also be seen through m both from upper management and same-level leaders, as part of the strategy of *Arguing for the value of Design.*

My findings extend the literature by examining the role of work of the Design leads specifically in managing expectations and responsibilities of designers, and its relation to the three presented success factors.

5.1.2 Leader on Multiple Levels

The related literature addresses how support on the manager-level is crucial for the implementation of design in projects and organizations (Boivie et al., 2006; Gulliksen et al., 2004). Managerial support provides the necessary leverage for focusing on and including measurements for usability through design processes. This support is essential to have on all organizational levels (Gulliksen et al., 2006). Ultimately, the Design leads are not the ones making the design decisions, but they are part of the context that affects how decisions can be made (Gulliksen et al., 2006). Successful design integration factors are stratified across three layers: individual, project, and organizational levels, with cultural aspects permeating each level (Boivie et al., 2003; Gulliksen et al., 2006). The conditions on all levels form the overarching context of design (Svanæs & Gulliksen, 2008).

The strategy of *Arguing for the value of design* operates similarly on multiple levels, affecting the conditions for design implementation. On the individual level, Design leads promote design by selecting personnel with suitable psychological and experiential backgrounds and skill sets for appropriate projects. Additionally, the individual level is addressed by having a good design milieu, effectively making it possible to rotate between and pull on resources from the rest of the designers. The project level is addressed in the same way as the individual level, with an added focus on inter-manager relations to assess appropriate projects for designers. Here, the Design lead serves as both an advocate, and a guard, for their designers. On the organizational level, Design leads provide proof of value for design, gathering successful cases and arguments towards designers' value on the project teams, and present them towards management, and the organization as a whole. In whole, this leads to increased design maturity in the company or organization.

Figure 3, shows how levels of the second strategy aligns with the levels and directions for the work of the Design lead of the literature (Boivie et al., 2003; Gulliksen et al., 2006; Merholz & Skinner, 2016). The blue boxes indicate the levels of the strategy *Arguing for the value of Design*, the green boxes indicate the levels by Merholz & Skinner (2016), and the purple boxes represent the levels of Boivie et al. (2003) and Gulliksen et al. (2006).
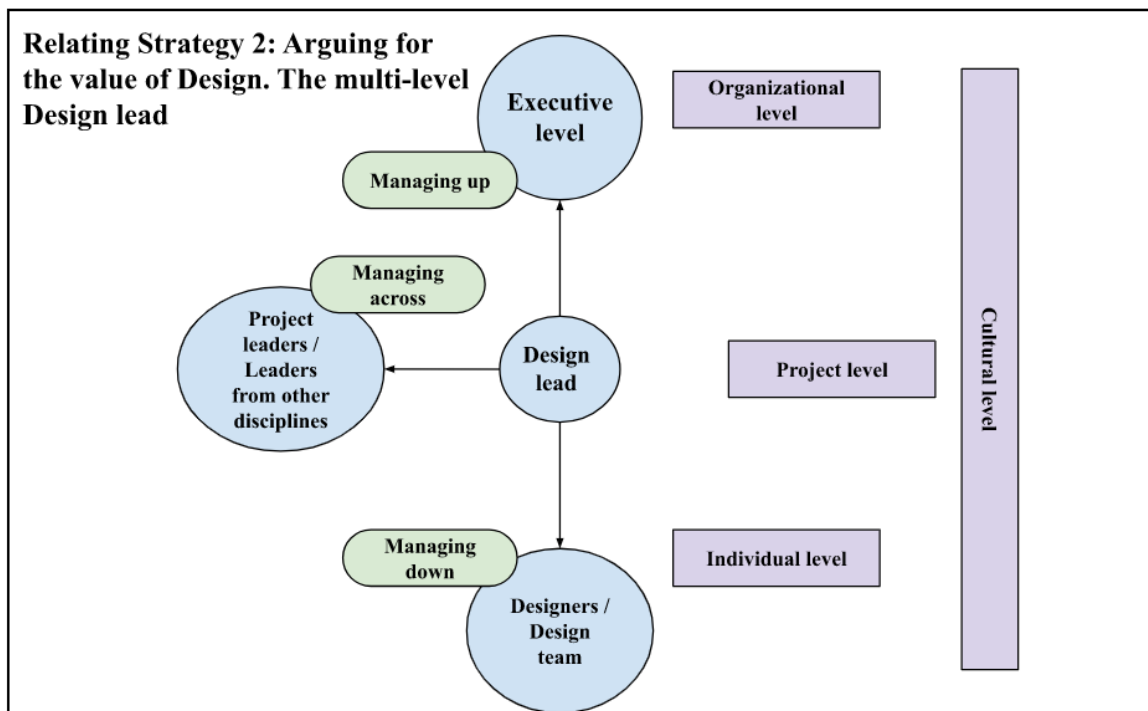
Figure 3: Relating strategy 2: Arguing for the value of Design. The multi-level Design lead

Somewhat similar to the abovementioned levels, the Design lead is advised to include the three levels in their work. From the practitioners' literature (Malouf, 2020; Merholz & Skinner, 2016), these levels point to the managers' relations in their work, as they go: up, down, and across the organization (Merholz & Skinner, 2016). Managing down involves being responsible for team performance and creating space for the designers and their work. Managing across means to coordinate across disciplines about projects, handle unreasonable requirements and make sure the design work is appropriately integrated. Managing up involves communication with executives, explaining design decisions and their arguments behind, and presenting how design results fit in with the overall goals (Merholz & Skinner, 2016)

The strategy of Arguing for the value of Design here extends and connects the academic and practical literature of how managers are guided to operate in the organization. The strategy provides empirical examples of how Design leads work over multiple levels and how the promotion and strengthening of the role of design, itself is a task to be completed over multiple levels and arenas. These findings are practical examples of how operating over multiple levels can be done for practitioners.

This strategy further extends the understanding and role of the Design lead, than what is presented in the related literature, where the manager position is noted to be important to 1)

getting into the team, 2) getting action space, and 3) creating leverage for usability within the project (Gulliksen et al., 2006, p. 570-1), but the details of how they work with it in practice is not further explored.

5.1.3 Countering the Lonesome Cowboy - How the Design Milieu Provides a Saloon

In the related literature and findings of this thesis, a tension is seen, where the designer in order to get a 'say' in projects needs to be stationed out in the teams, while also requiring support from other designers (Boivie et al., 2006). Designers need to be involved in project teams throughout the project, "having skin in the game" (Boivie et al., 2006, p. 626). However, interviewees emphasize the importance of establishing a design milieu to support design work.

The metaphor of the designer as "the Lonesome Cowboy" (Boivie et al., 2006) illustrates the challenges of being the sole or one of few designers within a team of non-designers. Boivie et al. (2006) state:

> "We further got the impression from the interviews that being a UD is a lonely job—our respondents rarely worked with other UDs in the projects—which may have increased the insecurity felt by the UDs as regards their role. They were on their own, fighting for usability and the users' needs—like the lonesome cowboy. The interviews also point to the need to consult others with the same role and background for discussing difficult problems." (Boivie et al., 2006, p. 630)

The literature repeatedly highlights the importance of designers being consistently present in project teams to be heard, acknowledged, and to have their usability concerns taken seriously This affects the usability and the interpersonal trust between non-designers and designers. The related literature acknowledges that designers need the community from a design milieu, but the proposals center around decentralized participation out in teams (Boivie et al., 2003, 2006; Gulliksen et al., 2006; Inal et al., 2020).

Having designers stationed out *in the field* is also what the interviewees present as the organization of designers today. Most are organized in the company or organization through a matrix-structure. Several of the interviewees characterize the teams as autonomous cross functional teams, and that included having designers positioned out in the project teams. It is framed as important for closeness to the projects and the communication between designers and non-designers. It reflects well the notion from the literature above that designers need to

be present for the project and "have skin in the game".

However, it is also pointed out in the interviews how it is prioritized to have at least two designers placed in the same team, preferably with skill sets that can complement each other. For the Design leads, it is recognized that *designers need other designers,* and some even claim designers to be a particularly social bunch. My findings build further on this, showing that the Design leads work actively to counter the necessary "lonesomeness" of the designer by establishing and developing a local supportive design milieu. These activities are shown through the third presented strategy of *Organizing and developing a Design Milieu.* It is the design milieu that will provide the extra support for the designer, make the place an attractive workplace, and manifest the position of design amongst the other disciplines in the company or organization. This would address the third factor of strengthening the role of design; the creation of leverage of design within the projects. A strong design milieu is thought of supporting designers and overall better designers, and the design team becomes an established part of the company or organization that is hard to overlook.

5.2 DesignOps by Accident?

Through the interviews, it became clear that most of the interviewees were not aware of or actively using the concept DesignOps. DesignOps was used, along with a framing of the focus of the data collection, in the recruitment process, but was only indirectly referred to throughout the interview guide. As a result, less than a quarter of the interviewees would explicitly mention DesignOps and how they were actively using the framework to organize their design teams. For the interviewee from interview 3, the concept of DesignOps was new, but instantly understood how it could be used further along the line, as the design team expands:

> "So I just have to say that for me, DesignOps is actually a bit new. A new concept. So I think you sparked an interest in me that this is something I need to read much more about. But, at least, as I think that yes, this is something I can definitely learn more about, read more about, bring into the design management, like into the organization."
> [Interview 3]

Interviewees, including those not mentioning DesignOps, described how they kept up with industry trends, participated in conferences, and sought inspiration from books and blogs to

improve their design team. Interviews 1, 2, and 9 actively applied DesignOps to analyze and optimize the design team in order to organize them in the most appropriate way.

Across the interviews, design teams were often organized similarly. From how designers were often spread out into project-teams to how important it was for the design team to have "back-up" for the design work and professional discussions on design related topics. The interviewees not referencing DesignOps presented how they organize for a good design milieu, building design systems, optimizing mobility options, and onboarding. These activities resemble essential DesignOps components such as organizing and optimizing the operations to better the design work (Battles et al., 2018; Malouf, 2020; UXPin Inc., 2021) without actively or knowingly "doing DesignOps".

In interview 3, the interviewee elaborates how they are already working on improving how their design team functions., They also comment on how a well organized and developed design team addresses categories of e.g. the Nielsen Norman Group of *1) How we work together, 2) How we get work done, and 3) How our work creates impacts* (Kaplan, 2019) by developing a good and supportive design milieu in-house which can help maturing the company or organization, design-wise.

5.3 Further Work

Given that Design leads' strategies often align with DesignOps, further academic research on this framework is warranted. My findings could serve as an entry point for investigating "strategies for DesignOps" and the role of Design leads in practice. The identified strategies can also offer practical contributions for practitioners who use or plan to adopt DesignOps: "... so for me, having a clear framework has been really, really amazing. And it makes the conversation so much more tangible." [Interview 1]

It is worth noting that both the literature and practitioner perspectives on DesignOps often focus on the business side, which aligns with the perspectives of my interviewees. As this thesis falls within Information Systems and Human-Computer Interaction, which spans both academia and the IT industry, it can act as a link between these areas. Future work could

explore the potential of design as a business advantage for value creation.

Additionally, further work can be done to understand the role of informal Design leads, those without a formally given mandate to strengthen the role of design in their company or organization. These informal leaders can often be the precursor to formal Design leads, and further understanding how they affect the organizational context is needed.

6. Conclusion

In this final chapter an account of the limitations of this study will be given, and a summary of the thesis will be presented.

6.1 Limitations

For this study, I see three key limitations; a geographical bias in the data collection both with the focus on Norway and specifically Oslo, narrow sample in regard to occupation, and methodological limitations.

The Norwegian IT sector makes up the empirical boundary for this study. For which, there are two reasons. Firstly, making Norway the context of this study is grounded in the reason of accessibility and opportunity for data collection. Even more specifically, all interviews have been conducted in Norway's capital Oslo. A majority of the designers in the Norwegians IT industry is found in Oslo (Kraftfôr, 2022). Focusing the data collection solely on the capital itself, adds to the limitations in the sampling of this study. Additionally, the problem raised earlier could, and probably should, be investigated in a broader context – even if only focusing on neighboring countries with similar societies and IT-industries. Alas, Norway can be argued to be ahead of many with the effort to establish a widespread focus on universal design building on WCAG 2.0 and directives from the EU (especially through the agency of the Norwegian Digitalization Agency (https://www.digdir.no/)). Even with this focus on design, problems, such as the need to "justify" and prove the worth of design, are still found, and not handled in the literature, making it relevant to study further which hinders are still at play for the practice and inclusion of design in IT.

Secondly the sample could have been extended to include a wider range of positions working directly or indirectly with design.

Third and finally, it could have benefitted the study to diversify the methods of data collection. This includes concrete observations with the Design leads and insight into e.g., internal systems and documents, which would have been a good way to increase the validity of the study.

6.2 Conclusion

Throughout this thesis, I have examined how Design leads are working to strengthen the role of Design in IT-projects. Most of the research done on this topic has been focused on the designers and their experiences of coming into IT-projects. Many proposals of what could be done to strengthen the role of design have been put forward. One proposal in particular sums up the challenges and factors that should be addressed, and where the effort could be made: 1) getting into the team, 2) getting action space, and 3) creating leverage for usability within the project (Gulliksen et al., 2006, p. 570-1)

This thesis has put the Design leads in focus, as they hold a position with potential to affect the conditions for the designers but are underrepresented in the academic literature. This focus on the Design leads especially was led on by the initial curiosity to study the industry source concept of DesignOps. Through this lens, it became clear that the Design leads had more agency than first anticipated from the related literature.

The thesis was then guided by the following research question:

How are Design leads working to strengthen the role of design in IT-projects?

Based on 11 interviews across the Norwegian IT-industry in Oslo, I have identified three strategies to describe and explain how Design leads are facing and handling challenges in the integration of design into IT-projects, in order to strengthen the position of design and enhance the level of design maturity in their company or organization. The three identified strategies for doing so are: 1) Demystifying Design; 2) Arguing for the value of Design, through proof of value and advocacy on behalf of the designers; and 3) Organizing and developing a Design Milieu.

This thesis makes three contributions to the literature. The first contribution is an extension to the literature, by examining the role of work of the Design leads, specifically in managing expectations and responsibilities of designers, and its relation to the three presented success factors. The second contribution is the showcasing of how the strategy of *Arguing for the value of Design* provides empirical examples of how the Design lead operates on multiple levels. The third contribution is the extension of the literature on the tension between designers in teams and the need of a design milieu. Here, my findings build further on this in showing how the Design leads actively work to counter the "lonesomeness" of the designer by establishing and developing a local supportive design milieu.

Additionally, this thesis makes a practical contribution in that the identified strategies provide proposals of how design is dealt with in practice and to supplement a concept of the industry like DesignOps.

Lastly, this thesis proposes further work to be done on the connection between the identified strategies and how they provide an empirical example of DesignOps.

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